

# Cost and Use of Capitated Medical Services

## Evaluation of the Program for Prepaid Managed Health Care

Joan L. Buchanan, Arleen Leibowitz, Joan Keesey,  
Joyce Mann, Cheryl Damberg

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## PREFACE

This report contains the design and results from the cost and utilization evaluation of the Program for Prepaid Managed Health Care. Researchers at the New England Medical Center will produce a companion piece that describes the results from the satisfaction and health outcomes component of the evaluation. The Program for Prepaid Managed Health Care, a demonstration project funded by the Robert Wood Johnson Foundation and co-sponsored by the National Governors Association and the Health Care Financing Administration, was intended to encourage the development of HMO-type care for Medicaid recipients.

Work summarized here also appears in A. Leibowitz and J. L. Buchanan, "Setting Capitations for Medicaid: A Case Study of Rate Setting in One State," *Health Care Financing Review*, Summer 1990, and J. L. Buchanan et al., "HMOs for Medicaid: The Road to Financial Independence Is Often Poorly Paved," *Journal of Health Politics, Policy, and Law*, Vol. 17, No. 1, pp. 71-96; Copyright © 1992 by Duke University.

The present report is particularly relevant for state Medicaid agencies and health policy researchers interested in the effectiveness of HMO-type managed care programs.

The evaluation research was sponsored by the Health Care Financing Administration. The satisfaction and health outcomes component of the evaluation, by the New England Medical Center, was funded by the Robert Wood Johnson Foundation.



## **SUMMARY**

### **THE PROGRAM FOR PREPAID MANAGED HEALTH CARE**

Throughout the 1970s and into the early 1980s continuing efforts to control inflation in Medicaid expenditures led states to adopt stricter Medicaid eligibility standards, which in combination with a recession in the early 1980s left nearly 40 percent of the nation's poor without medical coverage. To prevent further restrictions in Medicaid access, the Robert Wood Johnson Foundation (RWJ) sponsored a demonstration project, the Program for Prepaid Managed Health Care (PPMHC) in the first half of the 1980s. The demonstration, which promoted the use of capitation and case management within the Medicaid program, was an effort to control costs without restricting access to necessary medical care.

The demonstration solicited proposals from major Medicaid providers offering three-year start-up funding to reorganize to deliver capitated, case-managed services. A technical review team read each proposal, site-visited the most promising groups, and finally chose 13 projects from 10 states across the nation for funding. Three of the selected projects never went beyond the planning stage. PPMHC sponsors included major teaching hospitals, community hospitals, networks of neighborhood health centers, nonprofit management companies responsible to county government, traditional health maintenance organizations (HMOs), and consortia of these types of organizations.

### **THE EVALUATION**

The Health Care Financing Administration and the Robert Wood Johnson Foundation jointly funded the evaluation of the PPMHC demonstration. The New England Medical Center (NEMC) and RAND conducted the evaluation using a common design and a common data-collection effort. Case studies and the cost and use analyses were RAND's responsibility, and NEMC analyzed the patient satisfaction, role functioning, and health outcome data. Results from the NEMC segment of the evaluation are being published separately.

The evaluation design included the following components:

1. Case studies of organization and structure in the 10 operational sites, which included surveys of the plan administrators, medical directors, chief financial officers, and the state Medicaid agencies.

2. A review of rate-setting methods, which included a detailed analysis in two states and a more general survey of the state Medicaid agencies that dealt with the 10 operational plans.
3. A randomized clinical trial to study detailed patient-level data on cost and utilization patterns in two sites. (NEMC studied health outcomes and patient satisfaction for this same set of patients.)

Detailed reviews were made of the rating-setting procedures in New York and Maryland, the two states with Medicaid waivers from the Health Care Financing Administration. The waivers allowed the plans to offer Medicaid recipients who enrolled in the PPMHC plans a guarantee on their Medicaid eligibility for six (New York) or twelve (Maryland) months.

New York and Florida, the two sites selected for the detailed patient studies, offered interesting contrasts. New York had a generous program with broad coverage of optional services and optional populations. Florida offered few optional services and primarily covered the categorically eligible, that is, the mandatory populations. Data sources for the cost and utilization analyses included (1) Medicaid eligibility data, (2) Medicaid fee-for-service claims data, (3) PPMHC utilization and expenditure data, (4) baseline interview data, and (5) utilization diaries.

## CASE STUDY FINDINGS

The case studies examined the organization and structure of the PPMHC projects. Relative to HMOs serving employment-based populations, HMOs that serve primarily Medicaid recipients were found to have a more difficult task establishing financial independence and organizational viability. They face a more limited and less effective set of design options that can be used to influence their financial stability.

In particular, both the set of services offered and the capitation amount are largely determined by the state Medicaid agencies. In addition, service provision costs may be higher than for fee-for-service Medicaid because the plans do not have the market purchasing power to impose the same arbitrarily low provider reimbursement levels that the state can. Thus, financial planning depends almost entirely on their ability to set, achieve, and maintain enrollment targets and the plan's ability to monitor and control the use of services.

The ability to set, achieve, and maintain enrollment targets in a Medicaid population is very difficult both because marketing presents special challenges and because loss of Medicaid eligibility forces disenrollment. Plans that serve an employment-based population appeal to potential enrollees by reducing their cost-sharing burden and by adding benefits. Since Medicaid recipients face little, if any, cost-sharing this HMO feature has no appeal. Adding benefits is seldom a reasonable marketing option because the capitations already cover most services. In the case of less generous states, low capitation rates preclude the addition of new services. Further, marketing is more costly for Medicaid HMOs because they must market to individuals, not employer groups. Because providers in fee-for-service Medicaid do not have a marketing function, there is no provision for these costs in the actual capitations.

PPMHC ability to monitor and control use of services also appeared weak. Only half of the projects used any financial incentives with providers, and in sites where PPMHC physicians treated both fee-for-service and plan patients, the latter constituted a small portion of their workload. Few HMO plans serving either public or private patients were able to establish good management information systems; therefore, reliance on monitoring activities for utilization control was unlikely to be effective.

Information was also gathered on rate-setting methods across the states with a more detailed review of the capitation rate calculations in New York and Maryland. Across the states, capitation rates were based on a percentage, usually 95 percent, of Medicaid fee-for-service costs in the plan operating areas. Nearly all states calculated separate capitations by Medicaid eligibility category. Only the more sophisticated states adjusted for the age and gender composition of the enrollee population.

Our more detailed reviews of rate-setting in New York and Maryland, both relatively sophisticated states, found that their procedures were basically correct. Our recommendations were largely intended to create more homogeneous rate groups and greater intertemporal stability.

A major shortcoming in all of the states was the failure to consider plan costs in the rate calculations. Although New York's written methodology actually called for the inclusion of plan costs in the rate-setting process, the plan was unable to provide cost information and rates were calculated without plan data.

## FINDINGS FROM THE RANDOMIZED TRIALS

In both New York and Florida, detailed longitudinal patient studies compared the amount of care received in the PPMHC plans with that in the Medicaid fee-for-service system for recipients who were also receiving support from the Aid to Families with Dependent Children (AFDC) program. In each site, we studied four groups of patients, two that were randomly assigned to one system of care or the other, and two that self-selected their system of care.

To understand the types of patients that the PPMHC plans were enrolling, we compared the sociodemographic characteristics and self-reported health status measured at the baseline interview for those who selected the PPMHC with those who opted to remain in the fee-for-service (FFS) system. We did not observe many differences between the self-selected groups in New York, but we found that the PPMHC was attracting somewhat sicker members in Florida.

Because participation in the evaluation, including the randomized portion, was strictly voluntary, we compare data on those who did and did not agree to participate in the randomized portion of the study. In New York, we had a great deal of difficulty enrolling people in the randomized PPMHC group. To a large extent, our problems mirrored the PPMHC plan's difficulties in securing enrollees; actual plan enrollment was quite low, under 2500 members. In contrast, we had little difficulty meeting our evaluation enrollment goals in Florida. Similarly, the Florida PPMHC was successful in its own enrollment efforts.

The randomized design provided another opportunity to look at selection into the PPMHC plans. By contrasting health care use by those who were randomly assigned to FFS with that of individuals randomly assigned to a PPMHC, the comparison is free of selection bias. That is, the random assignment eliminates underlying health differences between the two groups so the comparison reflects only the effects of systems of care (HMO or FFS). By comparing the fee-for-service use of those who were assigned to the random assignment PPMHC group but failed to enroll with the average fee-for-service user, we observed that those who were randomly assigned to the New York PPMHC, but failed to enroll, were higher than average users. Thus, the PPMHC enrolled healthier patients, on average. We also examined the utilization patterns in both systems of care for those who disenrolled from the New York PPMHC. We found that disenrollees had higher use while they were in the plan than the average plan enrollee and had higher than average fee-for-service use once they returned to fee-for-service care. These patterns suggest that the

New York PPMHC differentially enrolled healthier than average patients and experienced greater disenrollment by their sicker patients. In Florida, far fewer individuals failed to enroll in the PPMHC and those who did had average patterns of use. Disenrollees from the Florida PPMHC also had average patterns of use.

To understand whether PPMHC enrollees had lower use than their fee-for-service counterparts, we developed a four-part multiple regression model of monthly health care use. The first part of the model uses logistic regression to model the probability of using health care. Part two, also a logistic regression model, modeled the probability of using inpatient care conditional on using some care. In the third part, we used ordinary least squares regression to model the (natural logarithm of) monthly expenditures for ambulatory care users without inpatient care. Part four modeled monthly expenditures for those with inpatient use in that month.

We found that the PPMHC enrollees, both randomly assigned and self-selected, had lower use in both sites. The lower overall use resulted entirely from a reduction in the probability of using care. Once in the system, the amount of use was as high or higher than their fee-for-service counterparts. No differences were found in inpatient use.

From a policy perspective, the most important question in the cost and use component of the evaluation is whether the states will save money through introduction of PPMHC plans. In Florida, the answer is fairly straightforward. The plan reduced use and, if anything, attracted sicker than average patients judging by self-reported health status. We saw no evidence of favorable selection from either disenrollees or from those who failed to enroll. Thus, the state should save money.

The situation differed in New York. Although plan enrollees appeared to have lower use, we found that sicker individuals were either disenrolling from the plan or never enrolled. Thus, the state paid a capitation based on the average user for healthier than average enrollees and had to pay actual costs for the sicker individuals who remained in the fee-for-service system. In New York, introduction of the PPMHC actually increased costs to the state. Thus, we are left to conclude that with voluntary enrollment, the introduction of HMO-type plans can save money but these savings are not guaranteed. In fact, if enrollment is voluntary and prepaid plans attract healthier than average patients, state costs will rise.



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## **1. INTRODUCTION**

The decade of the 1980s saw a renewed interest in capitation and case management for Medicaid recipients. Federal legislation early in the decade promoted experimentation with these concepts. Continuing inflation in medical expenditures had created pressure at both federal and state levels to control Medicaid program expenditures. Case management and capitation offered an attractive alternative to early cost-containment efforts which had focused on stringent eligibility requirements and limited provider payment levels, strategies that clearly restricted access to care.

By mid-decade, three large Medicaid initiatives to expand participation in case-management programs were in progress. Arizona, the only state without a Medicaid program, introduced in 1982 the Arizona Health Care Cost Containment System (AHCCCS), which mandated enrollment in one of a set of health maintenance organizations (HMOs) that had contracted with the state. The second initiative, the Medicaid Competition Demonstrations, was largely a mandatory public sector effort that involved several forms of case management. The third was a voluntary private sector effort, the Program for Pre-paid Managed Health Care (PPMHC), initiated by the Robert Wood Johnson Foundation. This evaluation focuses on the last initiative.

The purported success of capitation and case management in containing employer health care costs led states to introduce these concepts into the Medicaid program. However, evidence on the cost-saving effects was limited to staff- and group-model HMOs. In both the private and public sector, the growth of these concepts has focused on newer, unproven organizational structures. Because innovation in the Medicaid plans paralleled the lead established by private employment-based plans, we chronicle these developments first. We follow this with a discussion of major Medicaid legislation and initiatives. We conclude this introductory section with a short summary of major findings from other Medicaid evaluations.

### **THE EVOLUTION OF CAPITATION AND CASE MANAGEMENT IN NON-MEDICAID PLANS SERVING THE PRIVATE SECTOR**

During the first half of the 1980s, HMO growth was significant; both the number of plans and the enrolled population tripled (Christianson

et al., 1991). The mid-decade was characterized by consolidation through mergers and acquisition creating national HMOs. In 1988, 50 percent of the HMOs surveyed (accounting for 55 percent of all HMO enrollees) responded that they were affiliated with a national chain or another insurer (Langwell, 1990). Conversion from nonprofit to for-profit status was a major trend throughout the decade. The impetus for this conversion came, in part, from the need for capital for expansion purposes. By the end of the decade a majority of the HMOs (accounting for 40 percent of all enrollment) had for-profit status (Langwell, 1990). However, this switch did not signal the achievement of financial well-being for the industry as nearly three-fourths of the plans responding to an underwriters survey reported financial losses in 1987 (Morrison and Luft, 1990).

By 1989, 65 percent of all standard metropolitan statistical areas had at least one HMO, and enrollment in some areas of California and Minnesota exceeded 40 percent of the population. The late 1980s saw a reduced growth in traditional HMOs as innovative managed care and hybrid options, such as preferred provider organizations and open-ended arrangements (sole carriers), were adopted and expanded.

Responding to increased competition from HMOs, traditional insurers introduced case management in the fee-for-service sector first in the form of preferred provider organizations (PPOs) and later under the heading of managed care. Although many hold strong beliefs in the efficacy of managed care, little real proof demonstrates that these programs save money. The growth of managed care in the fee-for-service sector has been quite rapid. To counter the success of PPOs and to limit the effect of competition, HMOs have now introduced the concept of an "open-ended HMO" or sole carriers wherein employers enroll all employees with a single plan but employees have the option of seeking care outside the plan in return for higher cost-sharing (Moore, 1991; Langwell, 1990).

The earliest forms of HMOs were staff-model plans, but growth in the 1980s was largely in independent practice associations (IPAs) and network-model plans. Mixed-model HMOs, that is, staff- or group-model plans that added an IPA component to expand into new market areas without major capital investments, grew rapidly. By 1988, 63 percent of all staff-model HMOs had converted to mixed models by adding an IPA and 37 percent of all HMOs, three years or older, were mixed models (Langwell, 1990). Organizational arrangements became more diverse as well, so labels such as staff, IPA, group practice, and network no longer fully described the complexity of organizational arrangements.

A primary source of this diversity arises from differences in the contractual agreements between the HMO health plan and its physicians, especially its primary care physicians. These contractual agreements differ (1) according to the basic method by which physicians are paid, (2) on whether physicians see only plan patients or whether they also see fee-for-service patients, (3) on whether the plan contracts directly with its primary care physicians or whether it contracts with another organization that contracts with the physicians, (4) on the degree of risk-sharing for primary care physicians, and (5) on the size of the risk pool (Hillman, Welch, and Pauly, 1992). Morrison and Luft (1990) assert that the distinction between HMOs, PPOs, and fee-for-service has become so blurred that it should be replaced with a continuum that delineates the degree of provider choice and the level of benefits.

## **MEDICAID AND MANAGED CARE**

Medicaid participation in HMOs was encouraged through the introduction of the Omnibus Budget Reconciliation Act (OBRA) of 1981 which altered conditions for enrollment, gave states greater flexibility in contracting with HMOs, and permitted mandatory enrollment under waivers. This legislation also encouraged the development of new forms of managed care for Medicaid recipients. The Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) repealed some of the waiver authority originally granted under OBRA but left the states with four major managed care options: (1) promotion of voluntary enrollment in HMOs, (2) voluntary or mandatory enrollment in fee-for-service or "partial capitation" primary care case-management systems, (3) voluntary or mandatory enrollment in "health insuring organizations," and (4) mandatory enrollment in multiple HMO systems.

By 1986, Medicaid participation in HMOs tripled, reaching 3.8 percent of Medicaid-eligibles. Nearly half of this enrollment was in mandatory enrollment environments, supporting the hypothesis that Medicaid-eligibles have few incentives to join these prepaid plans (Spitz and Abramson, 1987). Welch and Miller (1988), examining six states with the highest voluntary HMO enrollment, point out that market penetration in one-half of the metropolitan areas did not exceed 10 percent and surpassed 20 percent in only two of 14 areas. One of the two high penetration areas required mandatory enrollment in a case-management program.

By 1991, approximately 10 percent of Medicaid recipients were enrolled in some form of managed care. However, growth has shifted

from HMOs to primary care case-management (PCCM) programs, wherein a single provider is paid a case-management fee to coordinate all the care for a client (Spitz, 1987).

## **EFFECTS OF MANAGED CARE ON MEDICAID UTILIZATION**

A number of studies examined the success of programs that required Medicaid recipients to enroll in managed-care programs and prepaid plans (see Hurley and Freund, 1988; Freund et al., 1989; Aved, 1987; McCall et al., 1987; Vertrees, Manton, and Mitchell, 1989; Rosenbaum et al., 1988; Long and Settle, 1988; Bonham and Barber, 1987; and Wintringham and Bice, 1985). These studies have shown mixed results. In some cases, capitated arrangements resulted in substantial reductions in the quantities of services used. However, this lower use did not always translate into reduced Medicaid program costs, because capitation levels are based on average FFS expenditures in a prior year (Freund et al., 1989; Vertrees, Manton, and Mitchell, 1989). In other cases, the capitated plans have not provided sufficient incentives or controls to reduce use (Aved, 1987).

With OBRA section 1915 waivers, many states experimented with new forms of capitation and managed care. Many of these demonstrations were included in the Medicaid Competition Demonstration Project, a multisite research project to assess opportunities for Medicaid reform; findings from the project provide the backdrop for our findings. Although the Medicaid Competition Demonstration Plans differed in structure, all had the following characteristics. First, providers (individuals or provider organizations) received a fixed fee per month per enrolled patient. In some programs the fee covered a wide range of medical services, in others it covered only primary care, and in some FFS arrangements it covered case management only. Second, except in serious emergencies, only those services that were approved in advance by the provider (gatekeeper) were paid for by the program. Third, case managers may have faced financial incentives, which ranged from modest to strong, to minimize expenditures on patient care.

Evaluations of several of the Medicaid demonstration projects suggest that many plans that introduced HMOs or HMO-type features reduced emergency room use. For the most part, number of physician visits was also lower in the demonstration projects, though underreporting was considered a problem. Inpatient effects were less consistent and tended to be concentrated on children. Results were observed somewhat more consistently for children than adults. Findings on primary care use were mixed.

A quasi-experimental evaluation of programs in Monterey, California, Santa Barbara, California, and Kansas City, Missouri (which were all "mandatory enrollment sites," i.e., Medicaid recipients did not have the option of remaining in the FFS system), and of a voluntary program in New Jersey, found strong and pervasive effects of gatekeeping mechanisms on the likelihood of an emergency room visit. In all four programs the gatekeeper (an individual physician or primary care organization) was required to provide all primary care. Prior authorization by the gatekeeper was required before enrollees could receive nonurgent care in emergency rooms, inpatient care, or services from other physicians. The study compared use of the emergency room among stratified random samples of Medicaid recipients drawn from the experimental counties and nearby comparison counties. Much smaller proportions of both children and adults used emergency room services at least once in the experimental sites. However, the number of emergency room visits for persons with at least one emergency room visit was less substantially affected by the plans (Hurley, Freund, and Taylor, 1989a, 1989b).

Bonham and Barber (1987) examined the effect of a mandatory HMO Medicaid program on utilization through in-depth interviews with randomly chosen Medicaid recipients before the start of the program and one year into it. They found a 40 percent reduction in self-reported use of hospital emergency rooms, which appeared to be due to less use of the emergency room for nonurgent care. There was no change in the rate of hospital inpatient stays, ambulatory care, or prescribed drugs.

Two of the nine programs for which we have published estimates of program effects failed to reduce emergency room use, in each case for quite specific and readily identifiable reasons. In one program, pediatric emergency room use had been relatively low at the outset (under the FFS system), so there was not a lot of room for improvement. In addition, some of the emergency room use was unapproved by the case manager and consequently did not have to be paid for by Medicaid (Davidson et al., 1988). The other plan that failed to change patterns of emergency room use was hospital-based, so the hospital may not have faced strong incentives to shift care from the emergency room to the HMO clinic because it ran both (Hurley, Freund, and Taylor, 1989a, 1989b).

Most evaluations of non-Medicaid HMOs have found that HMOs increase the number of outpatient visits relative to FFS (Manning et al., 1985; Perkoff, Kahn, and Haas, 1976; Luft, 1981). The explanation for this greater outpatient use is that HMO patients face minimal

or no cost-sharing whereas FFS patients must pay at least part of the cost for outpatient visits. For Medicaid recipients, the situation differs. Neither HMO nor the FFS Medicaid requires patient cost-sharing. Thus, if Medicaid patients use more visits in HMOs, this would reflect improved physical access rather than greater affordability. This would also occur if HMOs encourage outpatient rather than inpatient use.

Most of these studies looked at mandatory enrollment using a quasi-experimental design. In contrast, our research considers systems with voluntary enrollment in a managed care option and is based on a randomized design. This design feature is important because it allows us to more clearly identify selection effects. Our work also looks at the difficulties of achieving organizational viability for new HMOs serving primarily Medicaid.

In the next section we describe the design of the PPMHC evaluation. Section 3 presents our organizational and rate-setting case study findings. Our evaluation included a randomized trial in two sites. The design and implementation of the trial are discussed in Section 4 along with our enrollment outcomes. In Section 5, findings from the longitudinal component of the evaluation in New York are presented. Results from the PPMHC in Florida follow in Section 6. Policy implications are addressed in Section 7. We conclude with an appendix that describes the 10 operational plans in greater detail.

## **2. THE PROGRAM AND EVALUATION DESIGN**

This section describes the evaluation design, including site and sample selection procedures. The evaluation questions that are addressed in the study are presented along with a discussion of the methods used to analyze them.

To facilitate an understanding of the evaluation design, we begin with a brief description of the program that is being evaluated. Early in the 1980s the Robert Wood Johnson Foundation initiated a demonstration project, the Program for Prepaid Managed Health Care (PPMHC), to encourage the use of case management and capitation for Medicaid recipients. This report presents case study findings from the 10 operational PPMHC plans and a more detailed patient-level evaluation of the outcomes of two of these demonstration projects.

### **THE PROGRAM FOR PREPAID MANAGED HEALTH CARE**

#### **Background**

State efforts to control inflation in Medicaid expenditures throughout the 1970s often focused on tightening restrictions on eligibility and limiting provider payment levels. Tighter eligibility requirements, in combination with the recession in the early 1980s, which tended to swell the number of Americans living in poverty, led the Robert Wood Johnson Foundation and others to observe that Medicaid programs were serving a smaller and smaller share of the poor. By 1983, nearly 40 percent of those in poverty did not qualify for Medicaid benefits.

Further, lower provider payments led many physicians to limit participation in or withdraw altogether from the Medicaid program, creating access difficulties for those remaining eligibles. Emergency rooms and hospital outpatient clinics replaced physician offices as the routine sources of primary care for Medicaid recipients. This often led to uncoordinated care, doctor shopping, and a duplication of expensive services as patients floundered in their efforts to make a highly fragmented system work for them. In addition, care was more expensive as hospital outpatient clinics and emergency rooms have generally higher unit costs due, in part, to the need to amortize facility costs.

Private sector cost containment efforts suggested that HMOs were successful at controlling costs (Luft, 1981; Manning et al., 1985). Case management, an integral part of HMOs, held the potential for

altering the expensive and often duplicative care-seeking patterns typical of Medicaid recipients, while the budget constraint imposed by a capitation-based system offered clear potential for controlling costs.

But early-1970s efforts to introduce HMOs into Medicaid had many difficulties, particularly in California, where HMOs had successfully served the employment-based population for a number of years. Marketing scandals and inadequate provisions for service delivery among newly formed Medicaid HMOs dampened this early interest in the development of HMOs for Medicaid (D'Onofrio and Mullen, 1977).

With these lessons in hand, the Robert Wood Johnson Foundation (RWJ) established a demonstration program that aimed to take advantage of HMOs' promise in the areas of cost containment, improved access, and coordinated care while avoiding previous mistakes.

### **The Demonstration**

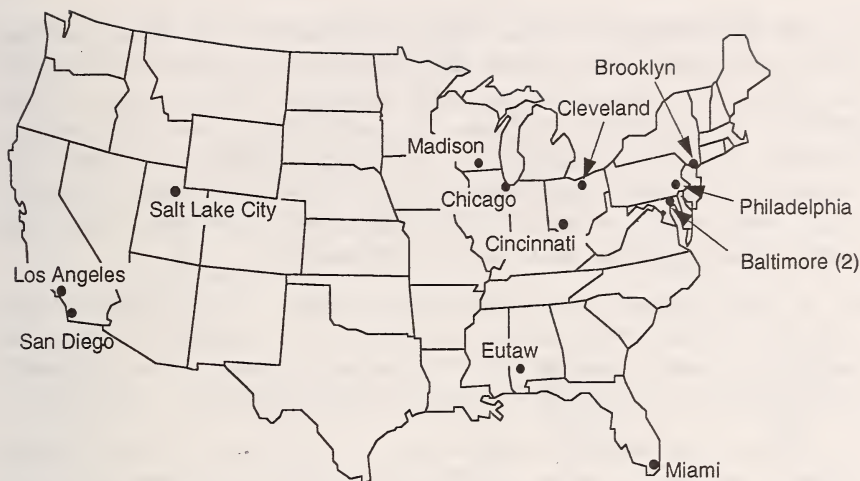
In the early eighties, RWJ solicited proposals from major Medicaid providers and their respective Medicaid agencies for the providers to reorganize into HMO-type plans using case management with capitated reimbursement. The demonstration sites selected by RWJ would receive three-year start-up funding to facilitate this reorganization. Additional demonstration funds beyond the third year were potentially available to all plans.

The demonstration was cosponsored by the National Governors Association (NGA) and the Health Care Financing Administration (HCFA). The National Governors Association provided technical assistance to the plans in their efforts to develop viable organizations. The Health Care Financing Administration provided Medicaid waivers to plans that applied under the demonstration.

Final selection of the demonstration sites was announced after a series of visits to the most promising candidate projects. Thirteen sites in 10 states throughout the continental United States were finally selected for the PPMHC program. A map of the PPMHC sites is shown in Figure 2.1. Demonstration awardees were quite diverse and included academic medical center consortia, community hospitals, networks of neighborhood health centers, public agencies, and existing HMOs. Technical oversight of the demonstration was contracted to a group at the New England Medical Center.<sup>1</sup>

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<sup>1</sup>Three of the demonstration projects never became operational and consequently were not included in the evaluation effort. The technical oversight group conducted interviews at the sites that failed to develop and explored reasons for the failure.



**Figure 2.1—PPMHC Grantees**

The PPMHC plans focused early enrollment efforts on Medicaid recipients eligible through participation in the Aid to Families with Dependent Children (AFDC) program. Except in previously established plans with significant enrollment, enrollment of Medicaid recipients from the Supplemental Security Income program was quite limited.

## **JOINT EVALUATION EFFORT**

A jointly designed evaluation was conducted by RAND and the New England Medical Center (NEMC). RAND had responsibility for the cost and utilization components of the evaluation and the case studies. These findings are reported here. NEMC had responsibility for analyzing the health outcomes, physical and role functioning outcomes, and the satisfaction measures. Results from the NEMC portion of the evaluation will be published separately.

The evaluation was jointly funded; HCFA sponsored RAND to conduct the cost portion of the evaluation and the case studies and RWJ sponsored NEMC to perform the analysis of other outcomes. A common design, sample, and evaluation enrollment procedure was used by RAND and NEMC.

## **EVALUATION DESIGN COMPONENTS**

The evaluation design includes the following elements:

**1. An organizational case study component.** In all operational sites, we collected data in our case study questionnaires to describe the structural, organizational, and financial characteristics of the PPMHC demonstration projects. In each PPMHC site, the medical director, the plan administrator, and the chief financial officer completed our case study questionnaires. Follow-up telephone interviews were used to update and clarify responses. Each state Medicaid agency also completed case study questionnaires.

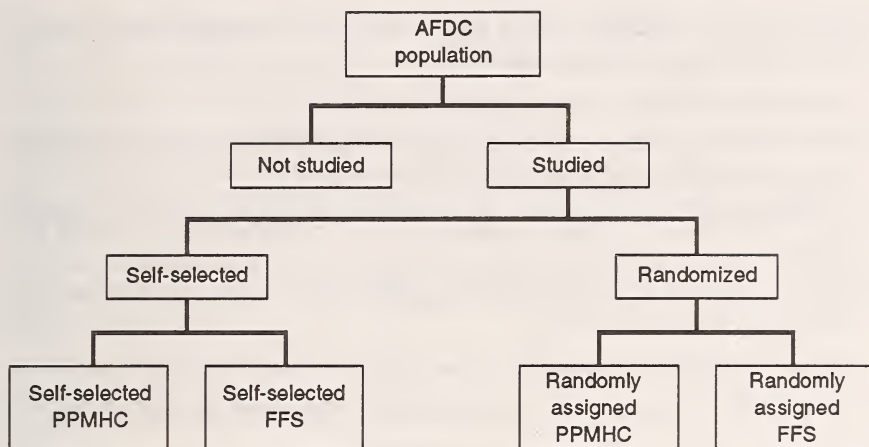
**2. A rate-setting case study component.** In two sites, we conducted detailed studies of the methods and procedures used to set capitation rates. General information on rate-setting was gathered from all states as part of the organizational case study.

**3. A cross-sectional component.** In two sites, a study was designed to estimate selection effects by describing the characteristics of those who selected the PPMHC plans in terms of prior utilization patterns, health status, and attitudes toward care, and to provide baseline assessments of major explanatory and outcome variables for analyses of data from the longitudinal component.

**4. A longitudinal experimental component.** In two sites, samples of Medicaid AFDC beneficiaries who were eligible for the PPMHC (by geographic and any other criteria) and who voluntarily agreed, were randomly assigned either to the PPMHC or to fee-for-service Medicaid; these were followed for one year. The experimental portion of the design allowed us to examine differences in outcomes related to system of care, unbiased by initial differences in the beneficiary groups.

**5. A longitudinal nonexperimental component.** In the same two sites, we enrolled samples of Medicaid AFDC beneficiaries who had voluntarily enrolled in the PPMHC and who had chosen to remain in the fee-for-service system. These samples were also followed for up to one year. The nonexperimental portion allowed us to examine the effects of self-selection, and to examine differences in outcomes related to system of care after statistical control for case mix differences in the beneficiary groups.

Figure 2.2 shows the evaluation design for the longitudinal and cross-sectional components of the study. We sampled only from the group of AFDC Medicaid-eligibles residing in the PPMHC catchment areas. Three subsamples were drawn from the Medicaid fee-for-service population: the two groups to be randomized and the self-selected fee-for-service group. The fourth group, self-selected PPMHC enrollees,



**Figure 2.2—Design of PPMHC Evaluation**

was sampled from the set of families in which at least one member of the family voluntarily selected the PPMHC for his health care.

## **DATA SOURCES FOR THE CROSS-SECTIONAL AND LONGITUDINAL COMPONENTS**

We collected data from several sources for these parts of the evaluation. In both PPMHC plans, we collected the following:

1. Medicaid eligibility and plan enrollment data: for the 12 months before study selection and the 12 months after selection.
2. Baseline interview data: at the initial interview to secure study participation.
3. Medicaid claims data: for the 12 months before study selection and the 12 months after plan enrollment.
4. PPMHC encounter data: for the 12 months after selection.
5. Health utilization diaries: at baseline and 2–4 months after enrollment.

## **RESEARCH QUESTIONS**

The cost and use evaluation addressed the following research questions:

- How did the PPMHC plans organize to achieve operational viability and financial independence?
- How were PPMHC capitation rates set?
- How did the underlying characteristics and prior use differ between the self-selected FFS and PPMHC enrollees?
- Did PPMHC plans control costs and reduce excess use of medical care?
- Did the effect of PPMHC derive from the system of care or the types of patients treated?
- How did PPMHC capitation rates relate to counterfactual costs?
- Did PPMHC plans save money for state Medicaid agencies?

### **Operational Viability and Financial Independence**

Separate case study questionnaires completed by plan administrators, medical directors, and chief financial officers provided the foundation for understanding how the PPMHC plans organized to achieve operational viability and financial independence. We expected to find that some types of PPMHC organization would be more or less effective in providing care to Medicaid recipients. Important characteristics that we considered were: (1) type of sponsoring agency or agencies, which varied considerably as we noted above; (2) the extent and adequacy of financial planning; (3) amount of financial risk-sharing by physicians and its impact on the level of use; (4) experience—whether the organization had prior experience under capitation; and (5) monitoring capabilities on patient utilization and physician profiles. These results are presented in Section 3.

### **Setting Capitation Rates**

As part of the organizational case study, we asked each state Medicaid agency to tell us generally about its rate-setting procedures. In addition, in two states, Maryland and New York, we examined in greater detail how the state Medicaid agency actually calculated the capitation rates. These case studies reviewed the adequacy of (1) the population group used for the base capitation calculations; (2) the rate-setting categories (i.e., age and gender breakdowns, categorical eligibility groupings); (3) the use of statewide versus local population data for specific components of rate-setting; (4) the extent of risk-sharing the PPMHC faced and whether the state or private parties offered reinsurance, and at what cost; (5) whether the PPMHC plans

were treated the same as other HMOs in the state in terms of capitation and risk-sharing; and (6) adjustments to the data for inflation, claims lag, and completeness.

To do this, we requested all documentation on the rate-setting process and, where feasible and practical, the data used for the determinations. We reviewed the procedure in a step-by-step fashion, replicating those calculations for which we were able to obtain data. This process sometimes led to different results stimulating additional dialogue and a greater understanding of the process. In Section 3, we describe this work.

### **Comparing Self-Selected Enrollees**

We used the cross-sectional baseline data from the enrollment interviews and data from the Medicaid eligibility files to compare underlying characteristics and prior utilization of the two groups. A significant body of prior research suggested that PPMHC enrollees would differ in important ways from Medicaid recipients who chose to remain in the FFS system. This analysis sought to determine how much of the difference in future utilization patterns could be predicted on the basis of data available upon enrollment in a health plan. Such data are important for developing reimbursement rates for various kinds of beneficiaries and are particularly germane to the retrospective adjustment to capitation rates in use in Maryland.

Data used for this analysis included demographic and health factors, categorical program, and prior use. We tested the hypothesis that the groups that select FFS and PPMHC do not differ significantly in observable characteristics. This work is discussed in Section 4.

### **Controlling Costs and Reducing Excess Use**

Because capitations form a natural budget constraint for the PPMHC plans, they had incentives to reduce total use. Each PPMHC enrollee had a case manager and the plan was expected to provide more coordinated care that reduced redundancy and eliminated excess visits. Further, these gatekeepers could control the use of expensive specialists, costly service locations, such as emergency rooms, laboratory tests, and radiological procedures.

Prior research demonstrated that HMOs saved money by reducing hospitalization rates (Luft, 1981; Manning et al., 1985). However, hospitalization rates in the AFDC population are largely related to childbirth, a nondiscretionary hospitalization, and were already quite

low. With few opportunities to reduce hospital use, PPMHC plans faced a challenge to reduce outpatient care.

To address this question we compared use in the two randomly assigned (RA) groups, RA-PPMHC and RA-FFS. This comparison yielded a direct measure of differences in costs and use, free of selection bias. We also compared use in the two self-selected (SS) groups, SS-PPMHC and SS-FFS, controlling for measured demographic and prior use variables. This comparison yielded a measure of the differences in use plus selection bias. The comparison of the two randomly assigned groups controlled for any unobserved selection factors. The comparison of the self-selected groups controlled only for the observed differences in demographic characteristics and in prior use between patients in the two systems of care. Sections 5 and 6 contain this work.

### **Efficiency Versus Selection**

If PPMHC plans attracted patients whose needs for care were lower, any reduction in use might reflect only their healthier population. One explanation for the common finding that newly available HMOs tended to attract a healthier mix of patients is that people with chronic disease prefer to continue being treated by a physician with whom they have an established relationship, and therefore do not join HMOs that require a change of provider. For a Medicaid population, however, individuals without strong relationships to a particular provider include both the healthy and individuals who used multiple providers and emergency rooms. Therefore, PPMHC plans were expected to achieve significant savings for the group of patients who had been receiving uncoordinated care in the FFS system. This analysis establishes whether any observed savings were real or merely reflected a population of patients with lower needs.

A direct test of the magnitude of self-selection into PPMHC plans was made by comparing the randomly assigned and the self-selected PPMHC groups, RA-PPMHC and SS-PPMHC. This work is presented in Sections 5 and 6.

### **Capitation Rates and Counterfactual Costs**

States aimed to set PPMHC capitation rates at a level that did not exceed what the PPMHC patients would have cost in the FFS system (i.e., counterfactual costs). However, lacking the evidence on expected costs, the states based capitation rates on estimates of average expenditures. If PPMHC plans enrolled a population with lesser health

care needs than the average Medicaid patient, a payment based on average Medicaid expenditure would increase the state's Medicaid costs. However, if patients requiring more services tended to enroll in PPMHC plans, the capitation rate might have been insufficient to cover the costs of care.

The analysis of self-selection is important in identifying whether the capitation rates were set too high or too low. A comparison of the counterfactual costs (among the SS-PPMHC group) with the actual reimbursement rate demonstrates the degree to which discrepancies occurred. Section 5 contains this analysis.

## **Medicaid Savings**

State Medicaid agencies typically establish capitation rates that are equal to 95 percent of the fee-for-service Medicaid expenditure level and assume that they are saving money. If enrollment in prepaid plans is voluntary, and only the healthiest Medicaid recipients choose to enroll, then the state may actually lose money. This occurs because the state is paying at the average for individuals who would otherwise cost less than average and must still pay actual (higher than average) expenditures for those sicker individuals who chose not to enroll in the prepaid plan.

To test this issue, we take advantage of our experimental design and define the concepts of technical and operational efficiency. Technical efficiency measures the plans' ability to demonstrate lower use among enrollees relative to those in fee-for-service. Necessary conditions for operational efficiency are that the plan enroll sufficient numbers and reduce use enough to save money overall. Thus, an operationally efficient plan saves money for the state. A technically efficient plan has lower use but may or may not save money for the state. In the paragraphs that follow, we specify in greater detail how these concepts are measured.

## **TECHNICAL AND OPERATIONAL EFFICIENCY IN THE EXPERIMENTAL DESIGN**

The experimental design offers us the opportunity to assess both technical and operational efficiency. Within the experiment, individuals were assigned to one of four groups, two random assignment groups (RA-PPMHC and RA-FFS) and randomly sampled self-selected groups (SS-PPMHC and SS-FFS). However, participation in the study was voluntary, so individuals did not necessarily agree to their assignment (especially in the two random assignment groups)

and others who agreed did not necessarily remain in their assigned groups. Thus, within each of the four assigned groups, we observe people actually using both systems of care. For some of our analysis, we combined use in both systems of care and attributed this use to the “assigned” group. For other analysis, we consider use patterns by system of care used, drawing inferences from those who select in or out of one system or the other.

Table 2.1 depicts this cross-utilization for a “hypothetical” site and how we would analyze these patterns. The numbers shown in the table represent plan months of data in each system of care. We begin by observing that some individuals assigned to the FFS groups also have some PPMHC use. The first line of the table shows that in this hypothetical example people assigned to the RA-FFS group actually spent 7800 months using FFS care and 200 months using PPMHC care. This represents people who agreed to participate in the study, did so for some months, and then at some point during the study decided to join the PPMHC. For these individuals, most of their observed months (7800) are in FFS but a small share (200) also occurred in the plan. The number of months of plan use is typically small, so when we analyze use by actual system of care, we drop these data.

For the two PPMHC groups (RA-PPMHC and SS-PPMHC) fee-for-service use is often more common. It occurs for two distinct reasons. Some people assigned to the RA-PPMHC group never get enrolled in the PPMHC, so all of their use is in the fee-for-service system. Others enroll in the PPMHC as part of either the RA-PPMHC or the SS-PPMHC groups and later decide to return to the fee-for-service system. Because this represented a significant proportion of the months of use and was potentially a source of either favorable or adverse selection into and out of the plan, we decided to study use in these plan months. To do this we created two additional categories, PPMHC-Never Enrolled and PPMHC-Switched. An analysis using this sample design is shown in the second portion of Table 2.1. For multivariate analyses, coefficients on the plan variables in this specification represent measures of the plan’s technical efficiency, that is, its ability to control use for the individuals it enrolls while they are in the plan. The coefficients on the Switched and Never Enrolled variables indicate whether selection in or out of the plan is occurring.

Because individuals were randomly selected and assigned to our groups, the group assignments are essentially equivalent. By attributing all care in either system to the assigned group, we have a measure of the PPMHC’s overall effectiveness, that is, its ability to influence overall system costs. This is operational efficiency. To be

**Table 2.1**  
**Hypothetical Example of Plan Months of Data by Assigned Group and Actual System of Care Used**

Assigned Group	Actual System of Care Used		Total
	FFS	PPMHC	
RA-FFS	7800	200	8000
RA-PPMHC	3000	5000	8000
SS-FFS	7100	900	8000
SS-PPMHC	2000	6000	8000
Total	19900	12100	32000

**Analysis Sample by Current Plan Groups'**  
**Actual System of Care Used**

Group	Actual System of Care Used		Total
	FFS	PPMHC	
RA-FFS	7800	Dropped	7800
RA-PPMHC	—	5000	5000
Never enrolled	2000	—	2000
Switched out	1000	—	1000
SS-FFS	7100	Dropped	7100
SS-PPMHC	—	6000	6000
Switched out	2000	—	2000
Total	19900	11000	30900

**Analysis Sample by Assigned Group**

RA-FFS	8000
RA-PPMHC	8000
SS-FFS	8000
SS-PPMHC	8000

operationally efficient, a plan must not only have lower use relative to fee-for-service but it must enroll a sufficiently large number of individuals to actually have an effect on overall costs. The sample specification for this analysis is shown in the lowest portion of Table 2.1.

**SITE SELECTION FOR THE CROSS-SECTIONAL AND LONGITUDINAL STUDIES**

Costs dictated that we conduct the randomization in only two sites. Data availability, willingness to participate in the randomized design,

and the feasibility of evaluation marketing were important criteria in the decision. The evaluators in consultation with their sponsors selected New York and Florida for the longitudinal component of the evaluation.

The two states offer an interesting contrast in many respects. New York has a generous Medicaid program covering most services and optional beneficiary categories. In addition, the eligibility criteria are generous. Florida, on the other hand, offered a minimal set of services and tended not to cover optional populations. Florida is one of the few states that set real limits on the amounts of covered services. Physician payments were low in both states. The PPMHC in New York was sponsored by a community hospital and a major teaching hospital sponsored the Florida PPMHC.

In the next section, we present the results of our case studies. This includes the organization case studies conducted in the 10 operational sites and the rate-setting studies conducted in New York and Maryland. In Section 4, we describe the implementation of the cross-sectional and longitudinal components of the study. Sections 5 and 6 present findings from the experiment in New York and Florida, our randomized sites.

### 3. CASE STUDY FINDINGS

#### INTRODUCTION

As part of the evaluation, we conducted case studies of the 10 operational PPMHC plans. The case study focused on plan efforts to become independent, financially viable organizations. Because rate-setting is integral to the success of any prepaid plan and has historically been a problem area, we also studied rate-setting efforts in two of the most sophisticated Medicaid agencies. The rate-setting studies included a review of the methodologies and, where data were available, replication of the calculations of rate determination.

To realize their goals, the delivery of high-quality medical care with adequate access in a cost-effective manner, PPMHC plans had to become organizationally viable. To do this, they had to (1) develop financial plans suited to their organizational structure, (2) operationalize the components of the financial plans, which included the development of their staffing and enrollment base, and (3) monitor their operations and progress toward financial goals. The Robert Wood Johnson Foundation provided seed money and limited guidance to the plans for periods of 2-4 years to assist the projects in achieving organizational viability. Our case study survey, conducted in March 1987, occurs in the mid to late phase of these planning grant periods and predates our patient-level data collection efforts. This section discusses the PPMHC plans' financial planning, specifically their projected break-even enrollment targets, operational issues of staffing and achieving the needed enrollment base, and finally monitoring efforts aimed at both patients and providers.

Case study data were collected using a multipart survey completed by each of the 10 operational sites. Appendix B contains copies of these instruments. In developing our instrument, we reviewed surveys developed by others including the National Center for Health Services Research (NCHSR), "Organizational Structure of Prepaid Health Plans"; the 1983 Heatherington study done by Systematics; and J. Kosecoff et al., "The Structure of Primary Care: An Inventory," UCLA School of Medicine, Los Angeles, 1983. In addition, Medicaid agencies in each of the states in which a PPMHC was located provided specific information on their restrictions and limitations, their FFS rates, other prepaid contracts they had, the capitation rate-setting process, disenrollment, and project monitoring.

## PLAN SPONSORSHIP AND STRUCTURE

To understand planning and implementation differences across the plans, we begin with a brief description of the types of organizations that participated in the PPMHC demonstration. One of the RWJ goals for the demonstration was to encourage existing fee-for-service Medicaid providers to reorganize service delivery for a capitated case-managed environment. A parallel goal encouraged expansion of existing Medicaid HMOs into new areas to better serve the Medicaid population. This led to the creation of two types of PPMHC: (1) those directly sponsored by an established HMO or an alliance between sponsors and an established HMO, and (2) new HMOs sponsored by academic medical centers, community health centers, and others.

As shown in Table 3.1, five types of organizations, singly or in combination, sponsored the PPMHC plans: HMOs, neighborhood and community health centers (NHCs and CHCs), academic medical centers (AMCs), community hospitals, and nonprofit health care management companies responsible to county governments. Two PPMHC plans were sponsored by HMOs and another purchased an existing HMO to provide the foundation for its development. Two other PPMHC plans, both sponsored by academic medical centers, affiliated immediately with existing federally qualified HMOs. In these cases, physicians associated with the medical centers constitute a new and distinct provider component of the HMO. NHCs and CHCs sponsor three of the PPMHC plans and are affiliated with four others. AMCs sponsor three of the PPMHC plans directly and form the foundation for the provider network of a fourth. A more complete description of the PPMHC plans is given in Appendix A.

For the most part, the plans organized as independent practice associations (IPA) and capitated network models. Two of the plans have central components that are staff-model HMOs, but both have undertaken expansions using capitated contractual arrangements. When the contractual agreements are complete, these plans will become network-model HMOs. One plan neither employs nor contracts with its providers but rather purchases services on a Medicaid FFS basis from its sponsor.

## FINANCIAL PLANNING

Attaining financial independence is a necessary achievement for organizational viability. Capitation-based health delivery systems both necessitate and facilitate more financial planning. Adequate planning is essential because of the budget constraint imposed by the cap-

Table 3.1  
Plan Descriptions and Provider Groups

Plan	Sponsor and Affiliations	Medical School Faculty	Multi-specialty Group Practice	Solo Practitioners	Primary Care Network	NHC or CHC Network	Number of Ambulatory Delivery Sites	Number of Primary Care MDs	Service Area	Number of Plans in Service Area
A	Nonprofit management co. for county, AMC	X			X		3	8	1 county	3
B	CHC organization			X		X	3	6	5 counties (rural)	0
C	AMC, HMO	X			X		10	34	1 county	4
D	NHC, HMO		X			X	41	160	2 counties	4
E	AMC, HMO community hospital	X				X	20	—	1 city	3
F	HMO		X	X		X	18	58	2 counties	2
G	Community hospital						2	14	5 zip codes	1
H	4 AMC, HMO	X		X	X	X	28	74	9 cities	2
J	NHC		X		X	X	14	55	7 counties	9
L	Nonprofit corporation for county health department			X		X	10	67	1 county	3

AMC: academic medical center.  
NHC: neighborhood health center.  
CHC: community health center.

itation. The greater relative certainty in forecasting revenues makes planning in this environment somewhat easier, albeit more crucial than in fee-for-service systems. For capitation-based systems, revenues are fully determined by capitation rates and enrollment levels.

## Setting Capitation Rates

Prepaid health plans that serve predominantly employer-based populations set their own capitation rates and consequently affect revenues both through the actual level of the capitation and through their enrollment base. Although the premiums established by traditional insurance plans and by competing HMOs influence the rate-setting process, plans have the autonomy to establish their own rates independently. Historically, HMO rates were "community-based," that is, a single set of rates for each package of services was presented to all employers. The rates were based on historic costs to serve the enrolled population. More recently, some HMOs have introduced "experience-based" rates that are set using historic within-plan utilization, specific to each employer.

In contrast, plans that serve Medicaid populations cannot independently set their own capitation rates. For these plans, rate-setting is nominally a negotiated process. In reality, the Medicaid agency is the stronger player and often sets rates independently of the plans. The ability of state Medicaid agencies to set adequate capitation rates is a well-documented concern of plans and providers considering contracts to serve Medicaid-eligibles (Freund and Hurley, 1987). Typically, Medicaid capitation rates are determined by applying a discount to average fee-for-service Medicaid expenditures by "comparable" populations. Population comparability is often limited to geographically determined averages by Medicaid eligibility category (AFDC, SSI, etc.).

As in other Medicaid demonstrations, PPMHC capitation rates were set by Medicaid agencies as a percentage of average expenditures for Medicaid fee-for-service recipients. The capitation included all covered Medicaid services except nursing home care. The discount, usually 5 percent, was intended to guarantee a savings to the state. Plans that offered guaranteed eligibility were expected to share in the costs of the guarantee. In four states, survey respondents reported that the rate was "negotiated" between the Medicaid agency and the PPMHC. Since all plans reported that the rates were set based on FFS Medicaid, presumably these negotiations centered on the rules for what was included in the calculations. In Maryland, for example,

the plans negotiated to include a retrospective rate adjustment if the plans experienced adverse selection. First-year experience indicated that the plans did not experience significant adverse selection and this feature was dropped from the rate-setting process. In New York, the rate-setting process was designed to include a negotiation based on the plan's calculation of its expected costs and the state's age/sex/program-adjusted average fee-for-service costs. Unfortunately, the plan lacked sufficient experience and expertise to determine its expected costs, so the capitation was based entirely on average FFS costs (see Leibowitz and Buchanan, 1990). In seven states, the PPMHC capitation rate was unique to that plan; in the remaining states, the rate was the same as in other prepaid plans in the area.

We had the opportunity to study the rate-setting processes used by the Medicaid agencies in New York and Maryland in greater detail. Both of these states have established solid frameworks for their rate-setting methods. The suggestions that we made were enhancements, not fundamental criticisms.

### Technical Rate-Setting Methods in New York

New York based its rate-setting calculations on data from the PPMHC catchment area. A rate group for each age/sex/eligibility program was defined from data in the PPMHC plan's five zip code catchment area. Claims data used to estimate the capitation rates were adjusted to account for differences in claims lag and inflated forward. Adjustments were made for the stop-loss<sup>1</sup> and for time period used. Because the goal of rate-setting is to forecast the future on the basis of imperfect past data, no scheme is assured of providing the right answer. It was our assessment that the New York methodology took account of the most relevant factors that affected future Medicaid claims.

On several issues, however, we felt that alternative assumptions would have provided a better or more reliable forecast. Some of the adjustments that we suggested would have raised the estimated cap and others would have reduced it. The net effect of including all of our suggested refinements is not obvious.

As a general principle, we felt that New York should have relied more heavily on statewide rather than local area data in determining rate

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<sup>1</sup>A stop-loss is a form of reinsurance. It is the maximum amount that the plan is at risk for. Expenditures beyond the stop-loss were paid by the reinsurer, usually the state Medicaid agency.

groups, in calculating the stop-loss adjustment, and in calculating the guaranteed eligibility<sup>2</sup> withhold amounts. Using data from the entire state rather than the PPMHC plan's five zip code catchment area would have led to less variability in the capitation estimates. More stable estimates benefit both the state and the PPMHC. Using statewide data to establish age/sex/program-relative rates and local data to calibrate overall levels would insulate the plan from this undesirable variation.

When capitation rates are based on small samples and re-estimated annually, the statistical variation in the estimates may lead to wide year to year swings in the established rates. To illustrate this, we point out that rates for SSI Medicaid-eligibles age 1–20 years rose 23 percent in a two-year period, whereas rates for the 21–64 year old group rose 44 percent. Random variation in use and eligibility experience, rather than differential growth in costs, most likely accounts for this substantial difference in the rate of increase in expenditures. The rates of increase are probably more similar between the two groups than the data from small samples indicate.

The increased sample size available would also have allowed age/gender groupings with more intuitive appeal.<sup>3</sup> For example, although there are relatively few males age 20 years of age or over on Medicaid in the PPMHC plan's marketing area, their greater representation in the state data may have allowed separate capitation levels for males and females over 20 years of age. Males in this age group have significantly lower use as can be seen from the comparison of each group's average medical expenditures relative to children 6–13 years of age (see Table 3.2).

We found that rate calculations for newborns presented the biggest problem area. The capitation rates included all delivery and neonatal costs. However, all babies were actually born into fee-for-service Medicaid and the plan had the opportunity to observe their health status before deciding whether or not to enroll them. This procedure resulted in a substantial windfall to the PPMHC, since expensive neonates were never enrolled.

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<sup>2</sup>Guaranteed eligibility refers to a promise by the state to pay the plan's capitation for a specified period of time regardless of an individual's eligibility for the Medicaid program.

<sup>3</sup>New York used five age-gender groupings for the AFDC population: (1) children under 1 year, (2) males 1–20, (3) females 1–14, (4) females 15–20, and (5) males and females 21–64.

Table 3.2

**Comparison of Medicaid Expenditures by Age and Gender Groups  
Relative to Expenditures for Children 6–13 Years of Age**

Gender and Age Group	Percent Increase
Males over 21 years	57.2
Females 18–30 years	90.1 <sup>a</sup>
Females 31–44 years	156.6 <sup>a</sup>
Females over 44 years	180.9 <sup>a</sup>

<sup>a</sup>Significantly different from the value for males over 21.

We also observed minor inconsistencies in the order in which data were adjusted for specific parts of the rate calculations and a conceptual error in the treatment of retrospective eligibility. See Leibowitz and Buchanan (1990) for greater detail.

### Technical Rate-Setting Methods in Maryland

Like New York, Maryland based its capitation rates on local catchment area data. Data were adjusted to exclude noncovered services, to adjust for claims lag, inflation, and the costs of stop-loss and guaranteed eligibility. The state added adjustments for administrative costs for the plans, based on the state's costs for FFS claims processing. In addition, they added a per capita transportation allowance to cover the costs of this service provided by the PPMHC plans.

Originally, rates were specific to each of 16 Medicaid eligibility categories. Within the AFDC program, separate rates were developed for adults and children; all other programs used a single rate. Beginning in year three, the adult and child AFDC rates were replaced by 12 age-gender groups and the 15 other programs were consolidated into 6 non-AFDC categories. With this level of refinement, the size of the population base for rate classes increases in importance. (We strongly recommend that rates for each category be based on state-level data, which can then be calibrated to local expenditure levels.) RAND's work indicates that gender is not an important determinant of children's expenditures, so the state could consolidate rate groups by combining boys and girls younger than 14 years.

One unique feature of Maryland's rate-setting methodology was the provision for retrospective adjustment to protect the prepaid plans from the risk of adverse selection. The state compared the pre-enrollment utilization of Medicaid recipients who enrolled in the PPMHC plans with the average utilization of Medicaid recipients in FFS for each eligibility category.

The state's original goal was to conduct quarterly analyses to determine if retrospective adjustments were necessary, and to make retrospective payments to the plans every six months. Cohorts in each plan were defined as all new enrollees during each month interval after the start of the project. Each cohort was to be analyzed for up to 24 months after initial enrollment for possible retrospective payments. After four periods of continuous enrollment (representing 18–24 months), the pre-enrollment claims history of the recipients in the cohort was considered outdated.

By the end of the second quarter of the project, the participating plans were convinced that adverse selection was not a significant problem. Both plans agreed, therefore, to remove the requirement for retrospective settlement from their contracts with the state.

Like New York, Maryland's procedures were essentially sound. They were hampered by an inadequate data-processing budget and consequently their total reliance on aggregated data. This led to many adjustments and sometimes to assumptions regarding potentially affected subpopulations that lacked adequate foundation.

On the whole, Maryland demonstrated somewhat greater sensitivity to actual plan costs and the need to account for them in the rate-determination process at least through inclusion of administration and transportation costs. Although the Maryland PPMHC plans, one sponsored by a major teaching hospital and the other an established HMO, were very articulate in their concerns that their physician costs for salary and fees were much higher than the state's Medicaid reimbursement level for physician office visits, the state was unwilling to consider further adjustment. Because Maryland is an all-payor state, hospital payment levels were not an issue.

Since the plans did not control their own capitation rates, the only way to influence revenues was through the enrollment base. In the next subsection, break-even enrollments and financial profiles are presented for the demonstration plans. The determination of break-even enrollment levels and progress toward these goals is important because the RWJ start-up grants covered only the first 2–4 years of operation. If break-even enrollments were not achieved in this time, then the plans had to find other sources of revenue to supplement patient care revenues.

### **Break-Even Enrollment Projections**

Using the survey data, we have constructed financial profiles for each plan (see Table 3.3). The first row shows the break-even enrollments

**Table 3.3**  
**Financial Profiles**

	A	B	C	D	E	F	G	H	J	L
Breakeven enrollment	12,000	13,000	12,000	—	—	—	4,000	19,000	10,353	12,000
Enrollment, March 1987	6,888	918	10,809	71,000	19,190	10,944	2,175	7,762	6,133	8,789
Capitation	\$50.58	37.00	45.87	65.00	51.49	51.49	92.72	85.28	72.32	79.80
Stop loss	45 days	35,000	15,000	25,000	25,000 <sup>a</sup>	25,000 <sup>a</sup>	14,500	10,000	30,000	20,000
and \$500										
Percentage Allocation of Funds										
Primary care	36	37 <sup>b</sup>	29	35	28	36	46	23	30	26
Referral and ER	—	4	12.5	—	10	15	9	20	—	9
Hospital	55	13	38	37	18	25	34	39	33	35
Plan and administration	9	2	8	8	25	11	10	10	25	13
Reserves	—	30	—	—	—	9	1	8	—	17
Other	—	—	12.5	20	19	4	—	—	12	—
Administration cost/ enrollee/yr	\$55	9	44	62	158	68	111	102	217	124
Number of Full-Time Equivalent Staff										
Administration	5	—	5	75	16	9	2	3	11	16
Marketing	5	—	2.5	150	33	17	6	12	8	9
Other	20	—	14.5	15	27	1	5	2	2.5	3.5
Enrollees/staff	230	—	491	296	252	405	167	457	285	308

<sup>a</sup>Between \$7,000 and \$25,000 plan pays 15 percent, state pays 85 percent. Above \$25,000, state pays 100 percent.

<sup>b</sup>Included in this category are allocations for drugs and ambulance charges in this predominantly rural PPMHC.

reported by the PPMHC plans. Three of the PPMHC plans with established HMO sponsors or affiliations did not report break-even enrollment levels. Presumably, all three were very close to or had exceeded these levels. Most of the plans calculated break-even enrollment levels between 10,000 and 13,000 enrollees. Plans G and H are notable exceptions, with anticipated break-even levels of 4,000 and 19,000, respectively. Several of the PPMHC plans are not organizationally distinct from their sponsors and may, in fact, share staff. We hypothesize that a failure to accurately attribute these shared costs may account for the low estimate for Plan G. No explanation is apparent for the relatively high break-even point given by Plan H, though it may reflect higher anticipated operational costs associated with the four sponsoring academic medical centers. Relative to plans that serve employer-based populations, these break-even levels appear somewhat high. Data from the 1985 HMO census suggest that among the 100 HMOs, 10 or more years old, at least a dozen have population bases well below this level. Conventional wisdom suggests that enrollment levels on the order of 5,000 enrollees are needed for financial viability for prepaid plans that serve private or employment-based populations. We can only speculate as to why the PPMHC plans needed or at least perceived the need for a much larger enrollment base. Several easily identified factors include (1) the inability to set their own capitation rates resulting in tighter margins, (2) perceived higher needs and lower levels of documentation on costs of treating Medicaid-eligibles in HMOs, and (3) the nature of the sponsoring organizations which included several academic medical centers and a number of consortia. In the last case, the costs of coordinating and administering the plan services may exceed those of other types of organizations.

For the majority of plans, actual enrollment ranged between 7,000 and 12,000 members. Two plans with established HMO affiliations were much larger, Plans D and E at 19,000 and 71,000, respectively, and two were much smaller, Plans B and G at 918 and 2,175 enrollees, respectively.

### **Financial Allocations and Staffing**

We found an interesting variation in the planned allocation of capitation funds across the PPMHC plans. The allocation to primary care activities ranged from 23 to 46 percent. Hospital allocations ranged between 13 and 55 percent, tending to be high where primary care allocations were low. Not unexpectedly, the four plans affiliated with academic medical centers, Plans A, C, E, and H, all tended to have

high hospital and low primary care allocations, suggesting that these plans may have difficulty altering the traditional patterns of care associated with large teaching hospitals. Referral allocations ranged from 0 to 20 percent and tended to be inversely related to the size of the primary care allocation; these also tended to be higher in plans affiliated with academic medical centers.

For most plans, administrative activities absorbed around 10 percent of the capitation funds. However, we observed three outliers here: Plan B has a very low allocation of only 2 percent and Plans E and J appear high at 25 percent. In the case of Plan B, we suspect that administrative costs for the plan are being absorbed by the sponsor. We know of no explanation for the relatively high allocation for Plans E and J.

We also looked at projected annual administrative costs per enrollee at the break-even level. Here, we assumed that a substantial component of administrative costs would be fixed costs that did not vary with enrollment and thus we expected to see per enrollee costs dropping as plan size increased. Although we observed a great deal of variation in these costs, which ranged from \$9 to \$158 per enrollee year, they appear to be unrelated to enrollment. Apparently, smaller plans have more flexibility in staffing than we anticipated and can reduce their fixed costs for personnel such as plan administrators by paying lower salaries. The smaller scale of operation may require less management skill. High costs were not related to type of sponsor or formal HMO affiliation. Because the administrative allocation was roughly equivalent across plans, higher administrative costs tended to be associated with higher capitation rates.

Nonphysician staffing is reported in the lower portion of the table. Using these figures, we calculated the number of current enrollees available to support a full-time equivalent (FTE) staff person. We expected that larger plans would have relatively more enrollees per FTE. The actual figures range from 167 for Plan G to 491 for Plan C, a fairly large variation. Somewhat unexpectedly, middle-range plans, those with enrollments between 8,000 and 11,000 were able to staff using a larger enrollment base per FTE than either the larger or smaller plans. For this group, 300–400 enrollees supported each nonphysician FTE.

### **Achieving Financial Independence**

Of the 13 sites originally funded, 10 were operational at the time of the case study. Three of the 10 were at a financial break-even point

at that time, March 1987. Four others projected a break-even point by January 1988; two of the four were more than 70 percent of the way toward their break-even points and appeared likely to achieve these enrollments in the time frame specified. The third and fourth of this second group of plans and two of the three remaining plans had enrollment in the 40 to 60 percent range and it seemed probable that at least three of the four would become viable, ongoing entities. Site B, with under 1,000 enrollees, did not expect to become financially viable within the time frame of this demonstration and had indicated that it would seek further grant funding to support continued activity in the future. Thus, it appeared that 6–9 of the 13 original sites had the potential to reach their break-even enrollment targets and consequently could achieve financial independence.

Once financial plans were formulated, the PPMHC plans had to be put into operation, creating the necessary organizational structure and incentives. In the next subsection, we discuss how the PPMHC plans organized to deliver case-managed care within capitation budgets.

## OPERATIONALIZING THE FINANCIAL PLANS

To implement the financial plans successfully, at a minimum the PPMHC plans must (1) attract and develop an adequate provider network, (2) attract and retain an enrollment base at least equal to the break-even level, (3) orient physicians and management to the managed care environment, and (4) create appropriate incentives for utilization control.

### Physician Participation

Attaining provider participation in a voluntary Medicaid prepaid plan presents special challenges. Although providers may be attracted to prepaid systems because of their interest in trying new payment mechanisms, to retain or expand their market share (Freund and Hurley, 1987), or to improve Medicaid reimbursement levels (Freund et al., 1989), there can be barriers to physician participation as well. Among these barriers, true of both mandatory and voluntary programs, are the disruption of traditional patterns of care and physician-patient relationships, concern over the adequacy of the capitation rates, the compatibility of Medicaid eligibility patterns with prepayment, and the time-limited nature of many demonstrations (Freund and Hurley, 1987). Furthermore, physicians retain the option of FFS Medicaid, which entails no new risks to them.

All the PPMHC plans required that physicians meet designated plan standards and half imposed a probationary period. All the plans required specialists to be at least board-eligible and all but one required that primary care physicians be at least board-eligible.

The strategies used by the PPMHC plans to expand their physician networks included contracting with multispecialty group practices (three plans), with solo practitioners (four plans), with primary care networks serving the poor (four plans), and with NHC and CHC networks (seven plans). Four of the plans were encountering difficulties expanding their provider networks. Recruitment difficulties were generally specific to currently underserved geographic areas within the targeted service area. Sponsorship and strategies for completing provider networks are shown in Table 3.1 for each of the 10 operational PPMHC plans.

### **Enrolling Medicaid Eligibles**

Traditional HMOs' appeal to employment-based populations stems from reduced cost-sharing and enhanced plan benefits relative to regular fee-for-service health insurance plans. Neither of these options for attracting membership may be effective for marketing plans within the Medicaid population. In most states, Medicaid recipients face little, if any, cost-sharing in fee-for-service Medicaid. Given the broad range of Medicaid optional services in many of the demonstration states, including New York and California, it was not easy to identify new services for the voluntary prepaid programs that were not already available to the FFS Medicaid population. Only one PPMHC offers services not covered by FFS Medicaid. Site H requires no copayments and provides an augmented service package. Although initial enrollment in this site was good, it was not markedly higher than at several sites that did not offer additional services.

Enrollment at all of the PPMHC sites was voluntary, with the exception of Site C, a newly affiliated academic medical center within an established non-Medicaid HMO network. By agreement with the state Medicaid agency, enrollment in this site was capped at approximately 1,200 Medicaid recipients.

In states such as New York, Medicaid-eligibles viewed their Medicaid cards as very valuable, both because they can be used to secure services, and also because the card represents a source of identification that is useful in establishing an address. Surrendering the security of this identification became a serious impediment to prepaid plan enrollment in New York. This problem could, in part, be eliminated

through the introduction of Medicaid cards for plan enrollees, a procedure adopted in Florida.

Much of the early literature on Medicaid HMOs discussed the administrative problems created by the high involuntary turnover resulting from loss of Medicaid eligibility by plan members (Hester and Sussman, 1974; D'Onofrio and Mullen, 1977; Triegeer et al., 1981). Disenrollments, both voluntary because of dissatisfaction with the plan and involuntary as a result of loss of Medicaid eligibility, pose special challenges to the PPMHC plans. One plan reported an involuntary disenrollment rate of 4 percent a month; another reported a rate of 2.5 percent. Amortized, these amount to losses of 30 to 50 percent of all current enrollments. A substantial number of new enrollments are thus required just to keep a stable enrollment level.

Plan G reported a growth in enrollment of 614 people in 1987. During this time, however, their marketers submitted 2,873 enrollment applications to the state. Thus, for every enrollee actually added, the marketers had convinced 4.7 people, on average, to sign up. The total number of new enrollments for the year (2,873) exceeded the level of enrollments at the end of the year (2,863), even though the plan began the year with 2,249 enrollees. Thus, voluntary and involuntary disenrollment amounted to a complete turnover in the enrolled population during a 12-month period.

Plan H reported that the "most persistent operational problem experienced . . . had been the involuntary loss of eligibility by members and their automatic disenrollment from the HMO. More than half of [the] marketing effort is spent on replacing members who have lost their eligibility."

In response to these concerns, three of the PPMHC plans applied for waivers to offer guaranteed eligibility to plan enrollees, two for 12 months and one for six months. The waiver application process extended beyond a year before the states and plans received HCFA approval. (At least one of the sites used this feature quite effectively to recruit additional providers into the plan's network.)

The three plans that sought and obtained waivers to offer guaranteed eligibility to plan enrollees initially perceived this offer as an important inducement for Medicaid patients to voluntarily enroll in prepaid managed care. Because two of the three PPMHC plans applying for guaranteed eligibility were affiliated with established prepaid plans and began enrolling before receiving the guarantee, the effect of the guarantee on enrollment cannot be discerned from our data. Anecdotal evidence from these two plans suggests that the ability to offer the

guarantee did not stimulate enrollment as effectively as originally anticipated. The guarantee had little apparent effect in the third site, Plan G.

Attracting and retaining an adequate enrollment base requires an effective marketing strategy. The PPMHC plans had to develop their marketing strategies within the constraints established by the Medicaid agencies, which included the advance review of marketing procedures and materials for all 10 operational sites. In addition, three sites (A, C, and J) were prohibited from directly (door-to-door) soliciting Medicaid-eligibles to enroll in the plan. Because marketing is a new concept to many Medicaid agencies, the PPMHC plans were primarily on their own in devising their marketing strategies and consequently often marketed heavily in patient care settings, a strategy that almost certainly ensures selective enrollment of higher medical service users.

Because the PPMHC plans did not and could not determine their own rates, plan efforts to achieve financial viability within the Medicaid agency's established rates focused on the development of marketing and enrollment strategies that protected against adverse selection. Plans that originally marketed in sponsor clinics, a strategy that attracts relatively high medical care users, soon moved out into other marketing locations adopting strategies intended to attract lower care users. Anecdotal evidence suggested that more subtle marketing strategies that queried patients on existing provider relationships provided the opportunity for at least some of the plans to selectively discourage potentially high users from enrolling. We asked the plan directors whether they encouraged patients with existing provider relationships to join the PPMHC and if they employed formal screening guidelines in the enrollment process. All but three indicated that they did encourage patients with existing provider relationships to enroll in the PPMHC. Two indicated that they employed formal screening guidelines in their enrollment procedures.

Table 3.4 shows that the plans vary markedly in the size of their marketing efforts: annual budgets range from \$40,000 to \$7,000,000; number of enrollers ranges from 2 to 125, with the average at 21.4; and plan expenditures per enroller range from \$5,700 to \$83,000.

The costs per capita to attract a new member ranged from \$33 to \$414. Amortized over the total plan membership, this marketing effort amounts to a cost of between 58 cents and \$8.25 per enrollee per month, in one case accounting for 12.7 percent of the monthly capita-tion. Plans must save a corresponding amount in delivering medical

**Table 3.4**  
**Marketing Efforts of Operational PPMHC Plans**

Plan	Number of FTE Marketers	Total Marketing Budget (\$)	Net New Enrollment (\$)	Cost per Net New Enrollee (\$)	Monthly Marketing Cost per Current Enrollee (as of 3/87) (\$)	Marketing as % of Capitation	Enroller Incentives	
							Quota	Bonus
A	3	250,000	1,532	306	3.00	5.9	No	No
B	2	—	786	—	—	—	(a)	No
C	2.5	80,000	691	87	0.58	1.3	No	No
D	125	7,000,000	-16,066	(a)	8.25	12.7	Yes	Yes
E	34	825,000	18,810	33	3.58	—	No	No
F	17	676,000	4,860	104	5.17	10.0	Yes	Yes
G	7	40,000	662	38	1.50	1.6 <sup>b</sup>	(a)	No
H	7	275,000	2,238	92	2.92	3.4 <sup>b</sup>	Yes	No
J	9	511,000	292	—	6.92	7.6 <sup>c</sup>	Yes	Yes
L	7.5	612,000	1,108	414	5.83	—	Yes	Yes

<sup>a</sup>Lost enrollment.

<sup>b</sup>Based on capitation for female adult aged 15-44.

<sup>c</sup>Based on capitation for female aged 18-21.

care costs to offset this administrative cost. Because no comparable cost exists in the administration of FFS Medicaid, marketing costs are not explicitly included in the capitation rate.

Some PPMHC plans gave monetary bonuses to enrollers who exceeded enrollment quotas. However, although bonuses should spur enroller productivity, the four plans that used bonuses as an incentive to enrollers had the highest marketing costs per Medicaid enrollee. This suggests either that bonuses did not stimulate enrollment enough to reduce per capita costs or that plans instituted bonuses because they were displeased with the results of their previous marketing efforts.

Differences in the geographic distribution of the PPMHC provider networks are noted. Several plans cover many counties, usually rural counties, and the distribution of ambulatory sites is sparse. Although these plans may have less competition, enrollment is generally lower than in plans with smaller, more densely populated service areas. Other plans have an extensive network of sites within one or two cities or counties, whereas the remainder serve limited geographic areas with only a few ambulatory care sites. For these last two groups, the relationship between geography, the extent of the provider network, and enrollment becomes less clear.

PPMHC enrollment levels show no relationship to the number of plans that compete for Medicaid enrollees within the PPMHC service area. However, we do note that plans from states with higher percentages of Medicaid prepaid plan enrollees and more prepaid plan contracts tend to have higher enrollment levels, suggesting that general familiarity and acceptance of HMOs may play an important contributing role.

Because high disenrollment rates limit a plan's ability to achieve targeted enrollment levels, we asked the plans about major sources of patient complaints. Six of the 10 plans indicated that restrictions on patient choice of providers was a major source of patients' complaints; four plans indicated that appointment waits and scheduling were a problem; and three plans indicated that transportation and geographic access, patient waiting times, and forfeiture of Medicaid cards presented major problems. Although plans can certainly affect patient waiting times and appointment waits and schedules, most of the other problems cited are more characteristic of HMO organizational structure and consequently are less amenable to change.

## Managing Medicaid Prepaid Plans

A key factor in the success of the PPMHC plans is the development of the organizational skills necessary to manage a capitated program. As noted above, five of the 10 operational PPMHC plans were sponsored by or affiliated with HMOs early in the development process. Presumably, these relationships provided services, procedures, and insights into capitation-based management. An alternative strategy for acquiring new expertise is to contract with outside agencies for services and consultation. We asked the plans whether they contracted for any of the following services: (1) benefit and rate development, (2) reimbursement to providers, (3) premium revenue collection, (4) accounting and billing, (5) market analysis, (6) promotion/advertising, and (7) information and data processing. All of the non-HMO affiliated plans contracted for at least one or two of these services, but only Plan J contracted more extensively. Consequently, we conclude that contracting was not regarded as a realistic strategy for acquiring significant new management skills needed for capitated case-managed care systems.

## Operationalizing Case Management

Given that the PPMHC plans relied on existing fee-for-service Medicaid providers, what efforts did they undertake to retrain these providers to provide case-managed care under prepayment? How were patients reoriented to this new environment?

All but one of the plans reported some form of continuing physician education, though only four plans specifically indicated that case-management or HMO principles were included in special sessions. Three other plans referenced a general orientation program without stating its composition.

All the plans use some form of patient education on use of services in a case-management environment. These efforts began during the marketing and enrollment phase and were often continued by member services representatives throughout the duration of enrollment. Additional plan activities in this area included special marketing literature, newsletters, orientation sessions, health fairs, and other special training programs.

In general, the PPMHC plans relied on physician case managers. Only one site used registered nurses and social workers in this role. Family practitioners and pediatricians served as primary care case

managers at all 10 plans and internists in nine plans. At five sites (not the same plans), general practitioners and nurse practitioners/physicians' assistants also functioned as primary care case managers. Obstetricians/gynecologists were used in two sites.

## Structuring Financial Incentives

Table 3.5 shows the types of financial and risk-sharing arrangements that grew out of the demonstration plans. Although most of the plans used capitation arrangements to provide for physician services, in about half of these cases participating primary care physicians were actually salaried employees of the PPMHC sponsor or of a contracted network of primary care or community health centers. The risk was then transferred from the PPMHC to the sponsor or the contracted health centers but not necessarily to the primary care physicians directly. The distinction is important in understanding who bears the risks and how the incentives operate. The ultimate success or failure of the arrangement may depend on how well the physicians' employers are able to monitor the costs of physician services relative to the capitation they receive.

In all but one PPMHC plan, primary care physicians see FFS patients as well as prepaid plan patients. Because it is not clear that physicians really practice different styles of medicine with different patients, we computed the average number of enrollees per primary care physician to estimate the relative importance of the plan to the physicians' practice styles. The figures range from 105 enrollees per primary care physician for Plan H to almost 861 for Plan A. If we assume that a full-time primary care caseload constitutes 950 to 1,000 patients, we see that plan patients constituted a relatively small portion of the average full-time caseload for most of the plans. As a consequence, the importance of PPMHC income incentives may be relatively small. In addition, two plans that capitated physicians were academic medical centers where the effects of the capitation on income for full-time medical school faculty would have been minimal. The situation differed for clinical faculty who were usually solo practitioners in private practice near the medical center.

In all but two plans, referral services were paid on an FFS basis. Of the two that do not pay for referral services on an FFS basis, one plan capitated some of its referral providers and in the other, most of its referral providers were salaried. In the latter case, the sponsor actually salaried the physicians, and the plan paid the sponsor FFS for all visits, either for primary care or for referral.

**Table 3.5**  
**Financial and Risk-Sharing Arrangements**

	A	B	C	D	E	F	G	H	J	L
<b>Primary care physicians</b>										
% plan salaries	38									
% sponsor or CHC salaries; plan offsets with capitation		83		21				61		79
% sponsor or CHC salaries; plan pays FFS	62						100			
% plan capitates (solo)		17				9		39		
% plan capitates (group)			100	79		91			100	
% fee-for-service										21
<b>Primary care physicians see nonplan patients?</b>	Yes <sup>a</sup>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Enrollees/primary care physician</b>	861	153	318	444	—	189	155	105	112	131
<b>Referral services</b>							90			
% salaries										
% capitated						40				
% FFS	100	100	100	100	100	60	10	100	100	100
<b>Routine lab work</b>										
Capitated				X				X	X	X
FFS	X	X	X		X	X	X			
<b>Primary care (% withheld)</b>					15					20
<b>Hospital (% withheld)</b>						6		20		20

<sup>a</sup>The main component of this plan is a staff-model HMO with three full-time salaried physicians who see only plan members. Plan patients are also seen in primary care clinics serving predominantly FFS patients.

Most plans paid FFS for routine laboratory work as well, although four of the PPMHC plans included it in the capitation payment made to participating physician groups and CHCs.

Hospital payment methods varied across the plans. Four of the PPMHC plans paid a negotiated per diem rate, three paid charges, and three paid Medicaid line-item rates. Two of the three plans that reported paying charges were located in all-payor states where the hospital rates were established by a commission and all payors pay the same price.

All plans reported some type of stop-loss arrangements. In eight of the 10 plans, the stop-loss insurance was provided by the state or county; in the other two sites it was purchased from an insurance company. The threshold amount for the stop-loss varied from \$10,000 to \$35,000, with a cost-sharing arrangement between the state and the plan in some instances.

Risk pools are often used as incentives for utilization control, especially for referral and hospital services. Most commonly, some percentage of physician income, usually a share of the capitation allocated to physicians, is withheld pending an annual assessment of group performance. Unspent funds are then reallocated proportionately across the participating physicians. Occasionally physicians are also placed at risk to cover losses that could not be covered by the withheld capitation. Within the demonstration, risk-pooling was not commonly used. In only three PPMHC plans were funds withheld from primary care physicians to cover cost overruns. A fourth plan set aside \$3 per member per month to cover hospital cost overruns.

### **Cost-Containment Strategies**

Cost-containment strategies may take many forms, including participant education, monitoring and review activities, formal sanctions, risk-sharing, and negotiated or regulated fees.

Table 3.6 summarizes the cost-containment strategies that were used by the PPMHC plans. We have summarized utilization review activities according to what types of services were monitored: inpatient, outpatient, referral, and pharmacy. All but one plan had some utilization review activities, but two monitored only inpatient services. The one plan that did not have a utilization review program was, in fact, in the process of developing one. Three plans employed sanctions against overuse.

**Table 3.6**  
**Summary of PPMHC Cost-Containment Strategies**

Plan	Patient Education	Physician Education	Utilization Review	Physician Sanctions Against Overuse	Physician Risk-Sharing
A	X	HMO seminar	Inpatient, outpatient		
B	X	Case management seminar	Inpatient	X	
C	X				
D	X				
E	X				X
F	X	Orientation, records			Capitated
G	X	Bimonthly conferences			
H	X	Orientation, regular conferences	Inpatient, pharmacy	X	X
J	X		Inpatient		Capitated
L	X	Orientation	Inpatient, outpatient, referral, pharmacy	X	X

Five PPMHC plans reported that physician income was directly affected by performance. Plans that capitated physicians directly and those that used some form of withholding as insurance against cost overruns were classified as affecting physician income.

Although only two plans withheld funds to cover hospital cost overruns and none had negotiated other types of risk-sharing arrangements to put the hospitals at risk for the plan's financial success, all but one plan that responded negotiated hospital rates at least comparable to those obtained by the Medicaid FFS system.

Even with an adequate financial plan and a well-designed organizational structure, all organizations need the capability to monitor their progress toward the established goals. This monitoring has added importance for the PPMHC plans, as few have implemented strong utilization controls in their provider incentive structure. Monitoring capabilities and activities are discussed in the next section.

## MONITORING PROGRESS

Since the ability to monitor utilization, financial status, and quality of care depends on the availability of adequate data, we carefully reviewed the information the plans reported on the adequacy of their data systems. We found that, as with earlier demonstration programs, the inadequacy of data-management systems continues to present problems for PPMHC plans (Hurley 1986; Freund and Neuschler, 1986; and D'Onofrio and Mullen, 1977). This problem is not unique to Medicaid demonstrations; HMOs have historically been slow to develop patient data systems. In traditional health plans, this need is driven by the billing function. The absence of this function has left HMO-type plans with less incentive and fewer paper systems to form the foundations for automated patient data systems. Three PPMHC sites (B, D, and E) developed new management information systems for their plans; the others adapted existing ones. At least four PPMHC plans indicated that their data systems are the least effective dimension of their plans. Several state Medicaid agencies listed inadequate data systems as the least effective PPMHC dimension as well. Only half of the plans replied that they could or would soon be able to create physician use profiles to monitor provider practice and referral patterns.

We also asked how plans' hospitalization and ambulatory visit rates compared with other providers in their service area. Two of the 10 plans did not know. Seven plans indicated that their hospitalization rates were either the same, somewhat, or much lower than others in their area. Plans' ambulatory visit rates were generally the same or higher than other providers in their service area.

The cost-containment potential of prepaid group practice type HMOs has been well established (Luft, 1981; Manning et al., 1985), but relatively little evidence of cost savings by IPA and network type models is available. Although Luft concluded that there was no evidence of cost savings by IPAs, Welch (1987) argues that "modern" IPAs now achieve inpatient utilization rates that are comparable to traditional prepaid group practice model HMOs. Improved IPA performance depends upon stronger utilization review programs and greater use of financial incentives on physicians (Bahlke and Zuckerman, 1982; Barr et al., 1987/1988; and Welch, 1987).

Consistent with growth trends for non-Medicaid HMOs, PPMHC plans are predominantly organized as IPA and network models, where physicians treat both FFS and PPMHC patients. PPMHC utilization control depends upon the plans' abilities to set up proper provider incentives and the capability to monitor plan use by en-

rollees. The ability of plans to monitor utilization appears to be somewhat limited. The most recent available utilization data for the plans are presented in Table 3.7. For the plans reporting outpatient data, use rates, with the exception of Plan C, ranged between 3.0 and 4.4 visits per member per year. These rates all appear quite reasonable. Plan C, with 9.0 visits per member per year, is high. Two plans were unable to provide data.

Data on inpatient use are somewhat less reassuring. Inpatient days per 1,000 ranged from just under 300 to almost 1,100. The plans affiliated with academic medical centers had the highest rates of inpatient use. Again, two plans were unable to provide data.

Many PPMHC plans included CHCs in their delivery network and these CHCs were typically capitated by the plans. Some CHCs were able to augment their budgets with grant funds and supplemental budget requests, so it is not clear to what degree these organizations emphasized financial accounting and controls. When centers accept the PPMHC capitation, these new funds may become another budget source, and if the CHCs cannot accurately separate PPMHC from non-PPMHC costs and monitor utilization by all types of patients in the centers, then the potential for inadvertent cost shifting within the centers arises. We are left with the concern that PPMHC plans with favorably negotiated capitations with the CHCs may save money for Medicaid by shifting costs to programs serving indigent and other low-income populations. Once again we are confronted with the importance of adequate monitoring, accounting, and data systems.

**Table 3.7**  
**PPMHC Supplemental Data Utilization**

Plan	Period Ending	Inpatient Days/1,000/Yr	Outpatient Visits/Member/Yr
A	1989	662	4.4
B	1987	—	3.0
C	1988	945	9.0
D	1989	678	4.0
E	1987	—	3.6
F	1987	289	3.6
G	1989	400-405	4.3
H	1989	711	—
J	1987	580	3.7
L	1989	593	4.0

In the sections that follow, we examine care-giving patterns in two PPMHC sites more closely. Implementing the randomized design that we use to contrast fee-for-service and PPMHC care presented many challenges. Section 4 describes our implementation procedures in the two sites and the results for the cross-sectional studies. Sections 5 and 6 present the results for the longitudinal components. Section 7 contains the discussion summarizing these findings and the policy implications for both the case study and the more detailed patient-level studies.

## 4. IMPLEMENTING THE RANDOMIZED DESIGN

### INTRODUCTION

Randomized clinical trials have been the norm in medical research for many years. The procedures for conducting clinical trials are well tested and evaluation focuses on assessing the differences in outcomes, usually labeled success or failure, between the treatment and control groups. In the best designs, neither the provider nor the patient know who has received the treatment and who has not (double blind trials) when the outcome is recorded.

Experimentation in the social arena is more difficult; outcomes are generally not so simple, nor is the environment as easily controlled. Consequently, fewer social experiments have been conducted using a randomized design. Large-scale social experiments in the general population present many challenges, but similar experimentation in the Medicaid population is more difficult. Medicaid program regulations limit both the types of experimentation and reform that can be undertaken as well as the types of incentives that can be offered. Further, because social experimentation occurs infrequently, awareness of ethical issues is heightened when participants come from disadvantaged populations such as Medicaid-eligibles.

When the evaluation began, both the HCFA-sponsored cost analyses and the RWJ-sponsored outcomes analyses were located at RAND. Thus, an integrated evaluation design that addressed both issues was fielded. In this section we describe the implementation of our procedures for enrollment in the randomized trial of Medicaid HMOs in New York and Florida. Results from the baseline enrollment are presented for each site. Our enrollment experience, like the actual development of the PPMHCs, differs markedly between the two sites.

### LAYING THE POLITICAL GROUNDWORK

To field a randomized trial as part of the PPMHC demonstration and evaluation, it was necessary to secure the cooperation of a number of different organizations. These included the agencies funding the demonstrations and the evaluation, the organizations sponsoring the demonstration plans, and the state and local Medicaid organizations. We also wrote to inform local congressional staff about the study and offered to make additional information available to them. We did not contact community-based political organizations directly, but their

concerns and reactions also influenced our approach. Interestingly, primary support for a randomized design came from the Health Care Financing Administration's Office of Management and Budget (OMB). Without strong OMB backing, it is doubtful that we would have convinced all of the relevant parties that this was the best design strategy for all concerned.

From the outset, it was agreed that participation in the randomized trial would be voluntary at both the plan and the individual participant level. To secure the needed cooperation, we developed a design paper and a briefing and provided these to each organization. During the course of these meetings, we clearly laid out the advantages of a randomized design. Discussion also focused on how politically sensitive implementation issues would be handled. These included (1) marketing the evaluation, (2) participation incentives, (3) ensuring that potential participants understood that their Medicaid eligibility would not be affected by whether or not they agreed to participate, (4) ensuring that those who agreed to participate understood what they were agreeing to do, and (5) the treatment of non-English speaking populations. Our data needs were also a topic of discussion in meetings with the demonstration plans and the state Medicaid agencies.

Our original plans included randomized components in three states, New York, Maryland, and Florida. New York and Maryland had secured waivers to offer guaranteed eligibility to prepaid plan enrollees, and a condition of the waiver was that each agree to participate in the evaluation. Differences in the Medicaid programs across the three states offered interesting contrasts. New York offered broad coverage and had generous eligibility standards; Florida had much stricter eligibility standards and covered few optional services. Maryland fell in between. During the negotiation process, evaluation sponsors decided that Maryland would be dropped from the randomized component of the evaluation.

## IMPLEMENTATION ISSUES

Historically, the marketing of prepaid health plans has been subject to abuse (D'Onofrio and Mullen, 1977). Consequently, the Medicaid program closely monitors plan marketing activities and states have placed many restrictions on where and how plans can be marketed. To implement a randomized evaluation design, we needed access to an eligible population that had not been approached previously about enrolling in the prepaid plan. We further required that the population reside within the plan's catchment area. Medicaid agencies in

many states do not allow the door-to-door marketing of prepaid health plans, but we secured special permission for evaluation enrollers to interview Medicaid families in their homes. Further, the states provided us with lists of all Medicaid-eligibles within the catchment areas. For evaluation participants assigned to the prepaid plans, both the evaluation enrollers and the prepaid plan's own enrollers explained plan participation. All prepaid plan enrollees were required to visit the plan to complete their enrollment.

To promote a willingness to participate in a randomized design, evaluations typically offer incentives for participation. The incentives have two components, respondent payments for completing survey forms and participation incentives for those who agree to be randomly assigned to one of a set of options. The participation incentive is intended to encourage individuals who might otherwise prefer one option over another to agree to accept the random assignment. Usually these incentives are in the form of cash payments. But because Medicaid eligibility is income-based and cash payments may limit eligibility and often reduce grant payments, federal and state officials wished to explore other incentives first. In New York, the PPMHC had applied for and received permission to market the plan with guaranteed eligibility for the first six months of enrollment. Under guaranteed eligibility, Medicaid-eligibles who agreed to enroll in the plan were guaranteed that their eligibility for the prepaid plan would not be interrupted for a specified period of time regardless of their actual eligibility for AFDC or general Medicaid. To take advantage of this guarantee, Medicaid-eligibles had to remain in the prepaid plan. Federal and state officials agreed that evaluators could offer to extend the period of guaranteed eligibility to study participants who agreed to accept random assignment to either the prepaid plan or fee-for-service Medicaid. Because Florida had not applied for a waiver to offer guaranteed eligibility, this incentive could not be used as a participation incentive. Florida Medicaid officials agreed that a minimal cash payment would be allowed and that it would not be counted toward Medicaid eligibility. Respondent payments ranging from \$2 to \$5 per questionnaire were given in all sites.

A major concern for both the study's Human Subjects Protection Committee (HSPC) and the participating organizations was our ability to adequately describe to potential participants that (1) participation was entirely voluntary, (2) it would not affect their Medicaid eligibility adversely, (3) what agreeing to random assignment meant, and (4) how the process would work. Focus groups in the communities where the study would be implemented were used to help us formulate our informed consent forms and procedures in a clear and

understandable format. From these groups we learned that the random assignment process was best understood when presented as a gamble. We iterated many times on the design of our informed consent forms. State Medicaid agencies, the plans, and our HSPC all had to agree on the final format.

The treatment of non-English-speaking populations was the most difficult issue we faced. The prepaid plans in New York and Florida served large Spanish-speaking populations. This presented two challenges for the evaluation. First, it was necessary to ensure that potential participants understood what they were being asked to do and that agreement was strictly voluntary. To address this concern, we used predominantly bilingual enrollers for the evaluation. If an enroller was not bilingual and encountered a Spanish-speaking family, a bilingual enroller followed up on the visit. Also, all of our enrollment and informed consent forms were translated into Spanish. A second problem arose in the outcomes portion of the evaluation which planned to rely on self-report questionnaires. Preliminary studies suggested that concepts of health and satisfaction were not comparable in English- and Spanish-speaking populations. The latter implied that we needed to double our sample sizes if we expected to include this group in the study. These studies also suggested that as bilingualism increased, acculturation occurred and the concepts became familiar. Because we could not afford to double our sample, we developed a minimal reading/language comprehension form that allowed us to determine whether a predominantly Spanish-speaking family knew enough English to respond to our self-report questionnaires. These questionnaires for the outcomes component of the evaluation and the utilization diaries were not translated into Spanish.

## DATA COLLECTION

The study design involved the development of a number of forms and multiple contacts with each enrolled family. The contact schedule and list of forms is shown in Table 4.1. Since all forms involved questions about locations of care or site-specific patterns of care, response items were individually tailored to each of the two sites. Some of the forms were administered one to a household; others were specific to individual family members. At enrollment, forms were collected on all four study groups, self-selected FFS, self-selected PPMHC, random assignment FFS, and random assignment PPMHC. Post-enrollment forms were collected on the two random assignment groups and the self-selected plan enrollees. The self-selected FFS group was not followed longitudinally.

**Table 4.1**  
**Contact Schedule**

	Enrollment	Two Months Post	Four Months Post	Six Months Post	Twelve Months <sup>a</sup> Post
Household forms					
Family form	X				
Informed consent	X				
Language skill form	X				
Contact form	X	X	X	X	X
Individual enroller forms					
Periodic assessment questionnaires					
Infant version	X			X	X
Child version	X			X	X
Teen version	X			X	X
Adult version	X			X	X
Utilization diary					
Child version	X	X	X		
Adult version	X	X	X		

<sup>a</sup>Florida only.

The family form was the primary interview instrument used by study enrollers to determine family willingness and eligibility for study participation. This form was completed on all families regardless of their study eligibility or willingness to participate. The form includes demographic and health status data on all family members as well as data on previous sources of care. It serves as an important source of data on those who refused to enroll in the study, allowing us to check on the comparability of those who agree to participate and those who refuse. The form was completed entirely by the interviewer and was available in both English and Spanish.

Three versions of informed consent forms were developed, one for the two random assignment groups, one for the self-selected FFS group, and the third for the self-selected PPMHC group. Forms for the two self-selected groups differed because only the PPMHC group was followed longitudinally, so study participation for the self-selected FFS group was limited to completion of the set of forms administered at enrollment, whereas study participation for the PPMHC group included follow-up. In all three versions, the forms described the voluntary nature of participation, the data collection, and respondent payments. The payment schedules are shown in Table 4.2. For the random assignment groups, the forms also described the assignment

**Table 4.2**  
**Study Participation Payments**

Form	Enroll- ment	Payment Schedule			
		Two Months Post	Four Months Post <sup>a</sup>	Six Months Post	Twelve Months Post <sup>a</sup>
Set of periodic assess- ment questionnaires	\$5			\$5	\$5
Set of utilization diaries	\$2	\$2	\$2		
Florida participation incentive	\$45				

<sup>a</sup>Florida only.

process and the agreement to enroll in whichever plan was designated in the assignment. The forms were available in both English and Spanish and required a signature from the head of household. Copies of the informed consent forms in English and Spanish are in Appendix C.

The language skills form was administered to each household head or designated English-speaking respondent. This self-report form contained a short set of questions similar to the questions in the periodic assessment questionnaires. The purpose of the forms was to determine whether the respondent had sufficient language skills to be able to complete the self-report form, the utilization diaries, and the periodic assessment questionnaires.

The contact forms were used to verify data-collector workload activities and enrollment status and to record family contacting and location data for future follow-up. Data collectors were instructed to record each attempted contact, whether or not it was successful. These forms were used primarily as a field status tool. Except for the information on enrollment status, these forms were not entered into the study's data-collection system.

The periodic assessment questionnaires were the primary data-collection forms for the outcomes component of the evaluation. The forms collected data on health status, symptom-based access, and physical and role functioning.<sup>1</sup> Many of these measures differ according to the age of the respondent, so forms were tailored to four different age groupings: infants, young children, teens, and adults.

<sup>1</sup>Analysis of the outcomes portion of the evaluation is now being carried out at the New England Medical Center because the principal investigator on the outcomes component relocated there.

The utilization diaries asked about health care utilization in the preceding two months. They were intended primarily to verify that any observed differences between the FFS data and the prepaid plan data were real and not merely the artifact of different data-collection systems. Diaries contained limited information on the content and location of care. Our field efforts for both enrollment and subsequent contacts required more follow-up resources than we anticipated. Because these forms were intended primarily to verify other data-collection efforts, when additional resources were needed for enrollment and PAQ follow-up, we shifted resources away from diary follow-up activities into these other areas. In New York, we did not field any diaries at four months and expended only minimal follow-up at two months. Follow-up efforts in Florida were also reduced.

Both the periodic assessment questionnaires and the utilization diaries were originally designed as self-report forms. Teenage children were asked to complete their own forms. The household head completed these forms for himself or herself and all pre-teenage children enrolled in the study. To reduce respondent burden for the household head, for large families we limited the number of children enrolled in the study. Periodic assessment questionnaires and utilization diaries were collected only on families that agreed to participate.

Two additional sources of data were obtained in each site, PPMHC enrollment and utilization data, and Medicaid eligibility and claims data. These data were obtained on each individual selected in our sampling frame. Monthly Medicaid eligibility data were used for our sampling and enrollment procedures in both New York and Florida.

The PPMHC plans concentrated enrollment efforts on Medicaid eligibles who participated in the Aid to Families with Dependent Children (AFDC) program. Plans focused on AFDC participants because this group had lower health risks when contrasted with Medicaid eligibles who gained eligibility through participation in the Supplemental Security Income (SSI) program. Because the two populations differ markedly, and the PPMHC enrollment was largely drawn from the AFDC population, the evaluation limited enrollment to AFDC Medicaid.

After discussions with our technical advisory panel and a review of our power calculations, we adopted the sampling goal of 1,000 individuals in each of the four sampling groups, RA-FFS, RA-PPMHC, SS-FFS, and SS-PPMHC in each site. Samples of this size assured that we could detect differences of 10 percent in the major outcomes of interest between the groups, with 80 percent power.

## FIELD LESSONS

Our field operations are described in Appendix D. Some of the field lessons were common to both of our sites. In general the enrollment process took longer and required more resources than anticipated. The Medicaid population is mobile and often lacked telephones, so locating families and scheduling appointments was difficult. Once a family was located, interviews often required more than one visit to complete the informed consent, enrollment, and interview process.

Further, we found that when enrollers collected the periodic assessment questionnaires, response rates improved markedly. Language and reading skills were often marginal so completing the self-report forms was a larger burden than intended, particularly for bigger families. Study enrollers often helped families complete the self-report questionnaires and utilization diaries. After observing the respondents' difficulty in completing forms, we developed an interview version of the 6 and 12 month periodic assessment questionnaire forms in Florida to ensure adequate response rates and to limit the amount of individual interpretation of questions.

To accommodate these changes and the longer enrollment effort, we eliminated the four-month utilization diaries in New York. In addition, we devoted very little follow-up effort to the diaries in either site. As a result, the response rate for the diaries was quite low.

Another problem experienced in both sites was the difficulty in getting respondent payment checks cashed. Because some of the neighborhoods in the plan catchment areas were not as safe as others, we did not want study enrollers to carry cash for respondent payments. However, checks posed a problem because many places would not cash the checks and those that would charged substantial fees, absorbing much of the face value of the checks. To address this problem, we made arrangements with the hospitals sponsoring the two plans to cash study checks without a fee.

We set up a hot line for study participants to call RAND collect with questions and concerns. Participants were also given field office numbers. The hot line was intended to serve an important function, but its success was somewhat limited. We found that our procedures, which instructed individuals to call RAND collect, were somewhat intimidating for many study participants. In retrospect, an 800 number might have worked more effectively. Time differences also created some staffing and coverage difficulties at RAND.

In New York, the environment was not very receptive for prepaid plans. Only one other prepaid plan served Medicaid-eligibles in the

city and its Medicaid enrollment was limited. Further, Medicaid cards in New York were an important source of identification for many, so families were reluctant to enroll in a prepaid plan and forgo the Medicaid card and its supplemental benefits. Although current plan enrollment was small, around 2,000 enrollees, turnover was high and the city and state had been slow to process disenrollments. Consequently, the plan's image in the community was somewhat tarnished. It became clear early in the process that our efforts to enroll individuals in the random plan group were having limited success.

To implement guaranteed Medicaid eligibility, the city and state needed a system to track individuals who were eligible for the guarantee and to understand how much longer their eligibility was to be guaranteed. Because plan and study participants had different guarantee periods, separate codes were used to distinguish which group an individual belonged to. These codes were entered into the Medicaid eligibility files. The plan had responsibility for transmitting all of these codes to the city.

Ensuring that study participants actually completed the enrollment process and got coded correctly in the Medicaid files required a significant tracking and reconciliation system on RAND's part. The random assignment PPMHC group was particularly difficult. We found that many of the families who agreed to enroll in the PPMHC never made it into the plan. These difficulties arose, in part, because plan enrollers worked on an incentive system and received no credit for study enrollees. Tracking why families failed to enroll after agreeing to do so was the most difficult part of the reconciliation process. Plan cooperation in this process was limited. In many cases we were unable to learn why plan enrollments were not realized.

Midway through the enrollment process an entirely unanticipated problem arose because of the guaranteed eligibility codes. The state began revising its data-processing systems to accommodate a newly planned program expansion. As a result of the data-processing revisions, the plan codes were printed across the face of the Medicaid cards for all fee-for-service Medicaid recipients. The latter included our random assignment FFS group. The code assigned to this group had previously been used to refer to a type of insurance coverage that limited access to certain types of care. When the codes appeared on the Medicaid cards, providers assumed that the code referred to this limited coverage and denied study participants access to needed services. We worked closely with the state on this problem. They quickly established a hot line for providers to obtain factual information on access limitations. In addition, we did several mailings to

both study participants and to local providers to verify eligibility and limit the damage the introduction of these codes imposed.

In Florida, enrollment generally went more smoothly. The PPMHC had few difficulties meeting its enrollment targets and evaluation enrollment experience was similar. The image of the PPMHC in the community was positive. Being sponsored by the major university teaching hospital in the community undoubtedly helped the plan establish its positive image.

We encountered one difficulty, specific to Florida. We found that the Medicaid files contained post office boxes instead of home addresses for many recipients. Families used the post office boxes for security reasons because theft of AFDC payment checks was a common problem in the community. We modified our study procedures to accommodate this difference, but we had only limited success. When we encountered a post office box instead of a home address, we sent the family a letter describing the study and asked whether we could schedule an interview. Even with this modification, many persons could not be located. Below, we present actual figures for both sites. Fortunately, those who could not be located did not differ from those we located on any of the variables for which we had measures.

## **SAMPLING AND TRACKING AT RAND**

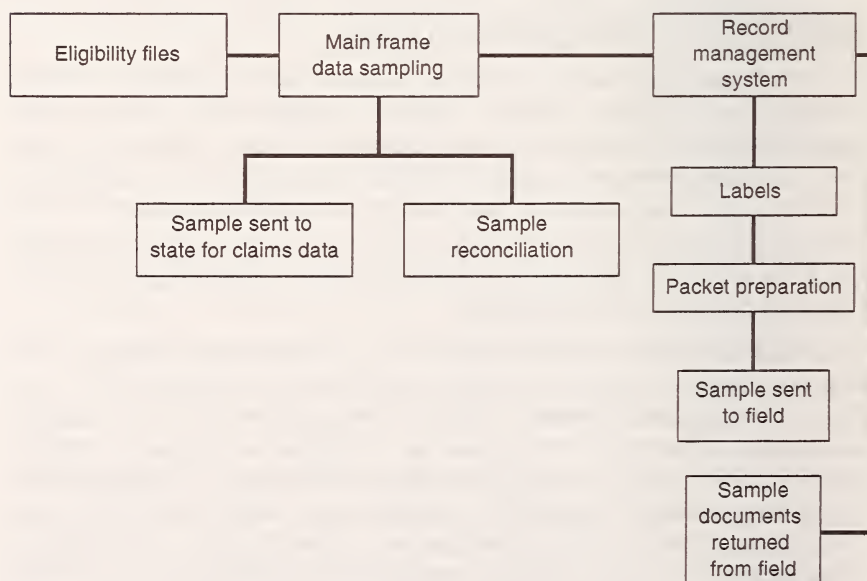
The Medicaid agencies provided us with monthly eligibility files for sampling in both New York and Florida. In both sites, sampling was limited to AFDC families who resided in the plans' catchment areas. Root Medicaid numbers were used as the sampling unit and all family members with the same root number were sampled together. In New York the eligibility requirements were generous and extended families were common. By contrast, in Florida, the program had more restrictive eligibility requirements.

Four samples were drawn in each site in each month. Three of the four samples that we drew each month came from families in the fee-for-service Medicaid system. These three samples were the random assignment FFS (RA-FFS) group, the random assignment PPMHC (RA-PPMHC) group, and the self-selected FFS group. Families with any family member enrolled in a prepaid plan were divided into two groups, those with at least one family member in the study plan and those enrolled in a prepaid plan other than the PPMHC under study. A sample of self-selected PPMHC families was drawn from the PPMHC group each month.

To track our sample and survey documents, we used a specially developed sample tracking system called the Record Management System (RMS). The RMS used a relational database and tracked all sample contacts and the receipt and status of all study documents. We used a bar code labeling system for document tracking within RAND. Enrollment packets with bar code labels were prepared monthly at RAND and sent to each of the field offices. Figure 4.1 illustrates the monthly sample processing tasks.

When the claims data were returned to RAND we updated the claims analysis file with the most recent data.

In Florida, we obtained data in larger batches, thus eliminating the need for continual updating. The state's change in data-processing contractors, however, added the complication of having the file formats change midway through the data-collection process. Each month, after a new sample of Medicaid numbers had been drawn, we sent the newly sampled numbers to the New York Medicaid agency. The state then matched those numbers to Medicaid Management Information System claims files. Each month the state provided claims data on the newly sampled families, as well as all previously sampled



**Figure 4.1—Sampling Process**

families. In this way, we built a claims history for each family for a period of one year before enrollment and for a year following enrollment. Because each monthly claims file contained information on Medicaid use by date of services for the prior year, we were able to analyze data from different months to determine how long it took to obtain 99 percent of claims that would ever be filed. This information was important in determining how long to obtain claims data following the 12-month study period.

The eligibility files were also used for sample reconciliation, verifying that those families that we enrolled in the PPMHC did, in fact, get enrolled. We also verified that cases still in the field were still Medicaid-eligible. Ineligible files were withdrawn.

The use of Medicaid identification numbers for sampling presented special challenges in the two sites. The New York eligibility system had no alias file and families just moving on or off AFDC eligibility often had periods of Medicaid-only eligibility just preceding or following their categorical eligibility. When families were on Medicaid only, they had different Medicaid numbers and the system had no way to recognize this.<sup>2</sup> For the study, we developed our own alias files using name, sex, and date of birth.

The more stringent eligibility requirements in Florida introduced a new problem. We frequently sampled many Medicaid root numbers with only children and no responsible adult. This occurred when the responsible adult was not eligible for Medicaid or when the child was being cared for by Medicaid-eligible adults whose eligibility differed from that of the sampled child. Because we needed to obtain informed consent from a responsible adult and because we wanted data on the health care decisionmaker, we created "dummy household head" records for sampled children when a responsible adult was not listed on the root Medicaid number.

### Obtaining Medicaid Claims

The Medicaid numbers of individuals who had been sampled for the evaluation were returned to the states so that they could provide Medicaid claims data for these individuals. The procedure for obtaining the claims data from the Medicaid Management Information System (MMIS) differed between New York and Florida. In both

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<sup>2</sup>The new system under development in New York can track aliases, but this was not possible at the time of our field procedures.

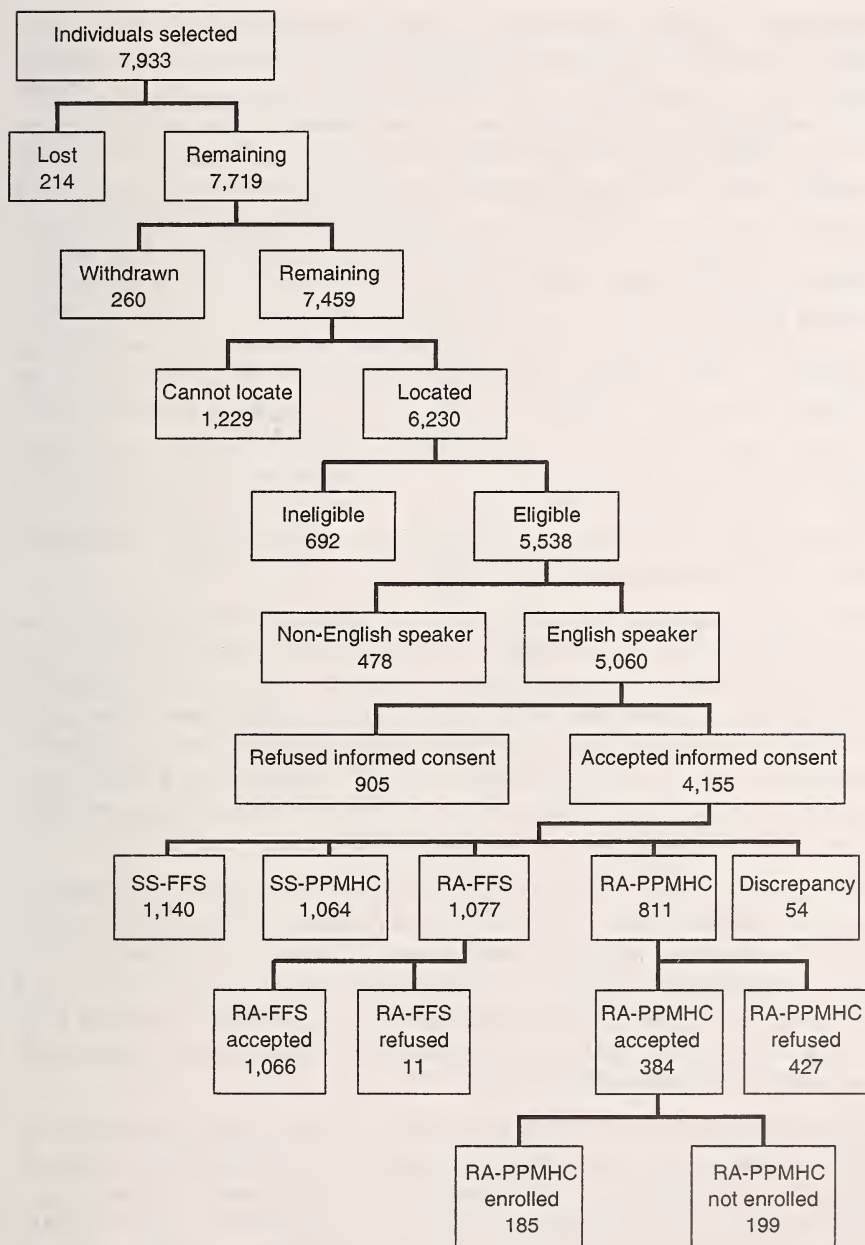
states the Medicaid agencies were extremely helpful in filing our claims data request.

In New York, we made monthly requests for claims data. In Florida, two requests were made, one midway through the study and the other one year after the last sample member exited from the study.

## **New York Enrollment Results**

We used specially designed software, the Record Management System (RMS), to follow the enrollment outcomes of each sampled case. Detailed outcomes for the New York sample are shown in Figure 4.2. In total, we sampled 7,933 individuals from the Medicaid eligibility files in the plan's catchment area in New York City. At the end of the sampling period, cases relating to 260 individuals were in the field but had not yet been contacted and were subsequently withdrawn. A postal mishap resulted in the loss of a set of cases early in the enrollment phase, with a loss of 216 persons. After three unsuccessful attempts to contact a household, a case was designated nonlocatable. Of the remaining sample, 1,229 people (16 percent) were in households that fell into this category. Among the located cases, 692 individuals (11 percent) were ineligible to participate in the study. The two primary causes of ineligibility were (1) loss of Medicaid eligibility between the time the case was sampled and the contact time and (2) one or more members of the family had enrolled in a prepaid plan. Among the eligible group of 5,538 persons, 478 (9 percent) did not speak enough English to complete the language skills form. About two-thirds of this eligible group finally enrolled in the study. Of the 5,060 eligible individuals, 905 (18 percent) refused to participate at the informed consent stage. These refusals were overrepresented in the random plan group as can be seen by the reduced sample (811) in the RA-PPMHC group.

Among those who agreed to the informed consent, it is clear that we met our sampling goals for the two self-selected groups and the random assignment fee-for-service (RA-FFS) group. We did not fare as well with the random plan group (RA-PPMHC). Among the 811 persons who had agreed to accept the random assignment, somewhat more than half of them refused when they learned that they had drawn the prepaid plan assignment. More than half of those who accepted the assignment at the time it was revealed failed to enroll in the plan. In the end, only 185 individuals completed the random assignment plan process, and we must conclude that the experimental portion of the design failed in New York.



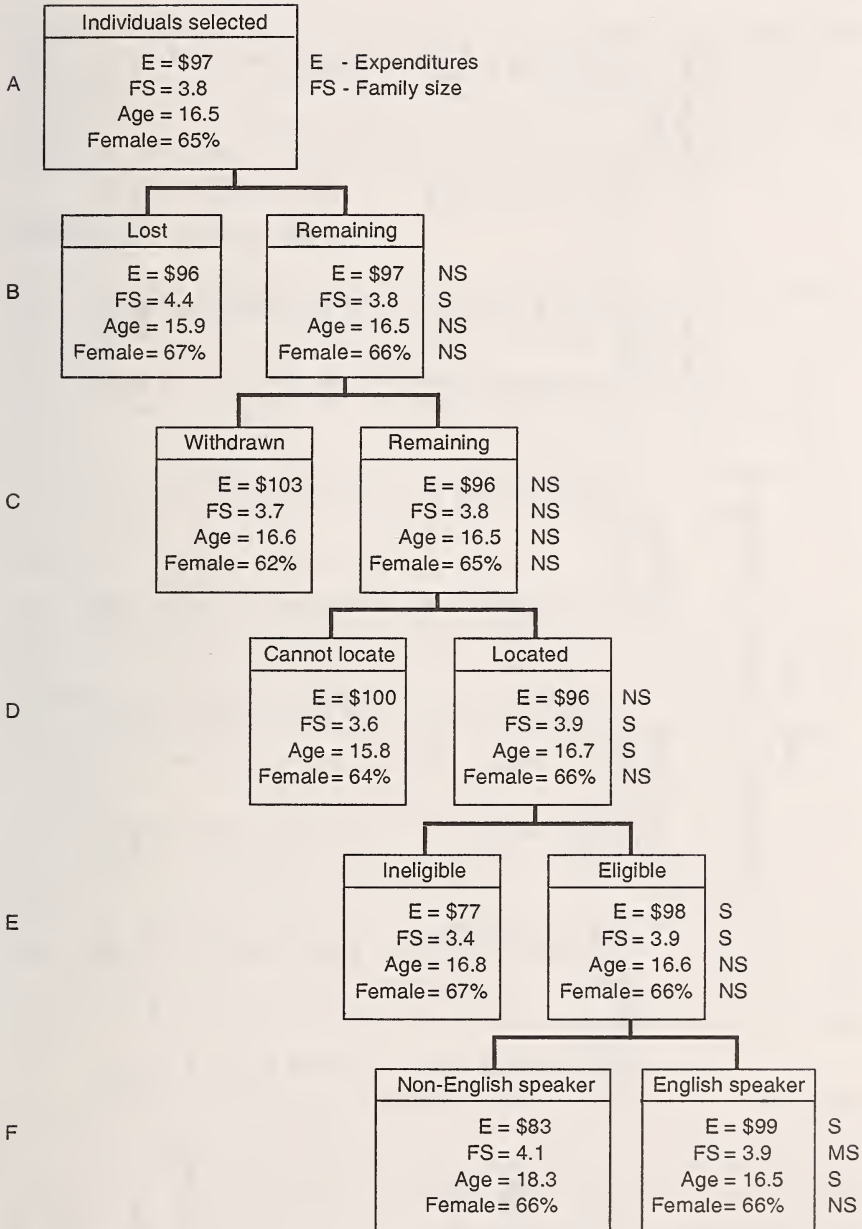
**Figure 4.2—New York Sample Status**

Although the sample enrollment in the experiment fell short, we were still interested in understanding how sample losses at each stage affected the representativeness of the sampling frame. Using the Medicaid eligibility and claims files, we calculated the average age, the average Medicaid family size, the percentage female, and the average monthly Medicaid expenditures for each person at each stage in the sampling process. For the first six sampling stages, these results are shown in Figure 4.3. Across the entire sample, prior monthly expenditures averaged \$97. We found no differences on this dimension among the lost, withdrawn, and nonlocatable cases. Both ineligible and non-English speakers had significantly lower average prior expenditures. The percentage female, 65 percent, did not differ in any of these subgroups. Family size, 3.8 persons, was not affected by the sample loss, although it was somewhat larger in the group of cases that was lost, and smaller in those that were ineligible or nonlocatable. The average age, 16.5 years, was also not significantly affected by sample loss; however, nonlocatable cases were younger on average and non-English speakers were older.

The remaining cases completed the enrollment interview process, so we have additional information on these cases. Those who refused study participation at the informed consent stage were significantly different from those who accepted on many of the dimensions measured (see columns 1 and 2 of Table 4.3). Refusers were somewhat healthier, that is, they had fewer chronic conditions and lower prior average expenditures. They were also younger but had been on Medicaid longer and were less likely to be Hispanic or female.

The next two sets of comparisons examine those who (1) accepted or refused random plan participation after learning about their assignment to the plan (columns 3 and 4) and (2) accepted random plan assignment and did or did not complete plan enrollment (columns 5 and 6). Both those who refused and those who failed to enroll tended to be sicker as measured either by self-reported health status or the number of chronic conditions.

A comparison of the 1,066 individuals who accepted participation in the random assignment FFS group with the 185 individuals who actually completed the random plan enrollment process indicates that plan enrollees were both healthier (as measured by self-reported health status and by the number of chronic conditions) and less likely to be pregnant than their FFS counterparts (see columns 7 and 8). Apparently, pregnant women were unwilling to accept random assignment to the prepaid plan.



**Figure 4.3—New York Sample Characteristics**

**Table 4.3**  
**New York Sample Comparison Measures**

Measure	Study Participation		Random Plan		Random Plan		Random Assignment		Plan Comparison Groups	
	Accepted	Refused	Accepted	Refused	Accepted	Refused	Enrolled	FFS	Random Assigned	Self-Selected
Married (%) <sup>a</sup>	14	16	10	18 <sup>a</sup>	11	11	11	10	11	16
Hispanic (%)	81	77 <sup>a</sup>	79	83	73	86 <sup>a</sup>	73	89 <sup>a</sup>	73	78
High school graduate (%)	28	25	24	23	30	18 <sup>a</sup>	30	25	30	30
Female	65	59 <sup>a</sup>	65	67	63	66	63	65	63	66
Years on Medicaid/AFDC	7.1	7.7 <sup>a</sup>	7.6	7.3	7.7	7.4	7.7	7.3	7.7	5.9 <sup>a</sup>
Age	16.7	15.6 <sup>a</sup>	17.6	18.6	16.4	18.9	16.4	16.5	16.4	14.5
Age distribution										
< 2	8	7	6	4	6	7	6	6	6	12
2-4	11	13	8	9	11	6	11	11	11	15
5-13	32	37	33	33	36	30	36	36	36	30
14-17	12	14	15	12	14	15	14	12	14	7
18-34	24	18	23	25	21	24	21	23	21	27
35+	13	12	14	16	11	18	11	12	11	8
Health status	3.3	3.4	3.3	3.2 <sup>a</sup>	3.5	3.2	3.5	3.1 <sup>a</sup>	3.5	3.5
Number of chronic diseases	1.4	1.0 <sup>a</sup>	1.1	1.3	0.8	1.5 <sup>a</sup>	0.9	1.3 <sup>a</sup>	0.9	1.1
Percent pregnant	3	5	2	2	0	3	0	3 <sup>a</sup>	0	3.2 <sup>a</sup>
Average monthly use	\$101	\$91 <sup>a</sup>	\$95	\$103	\$85	\$104	\$85	\$85	\$85	—
Sample size	4,155	905	384	427	185	199	185	1,066	185	1,064

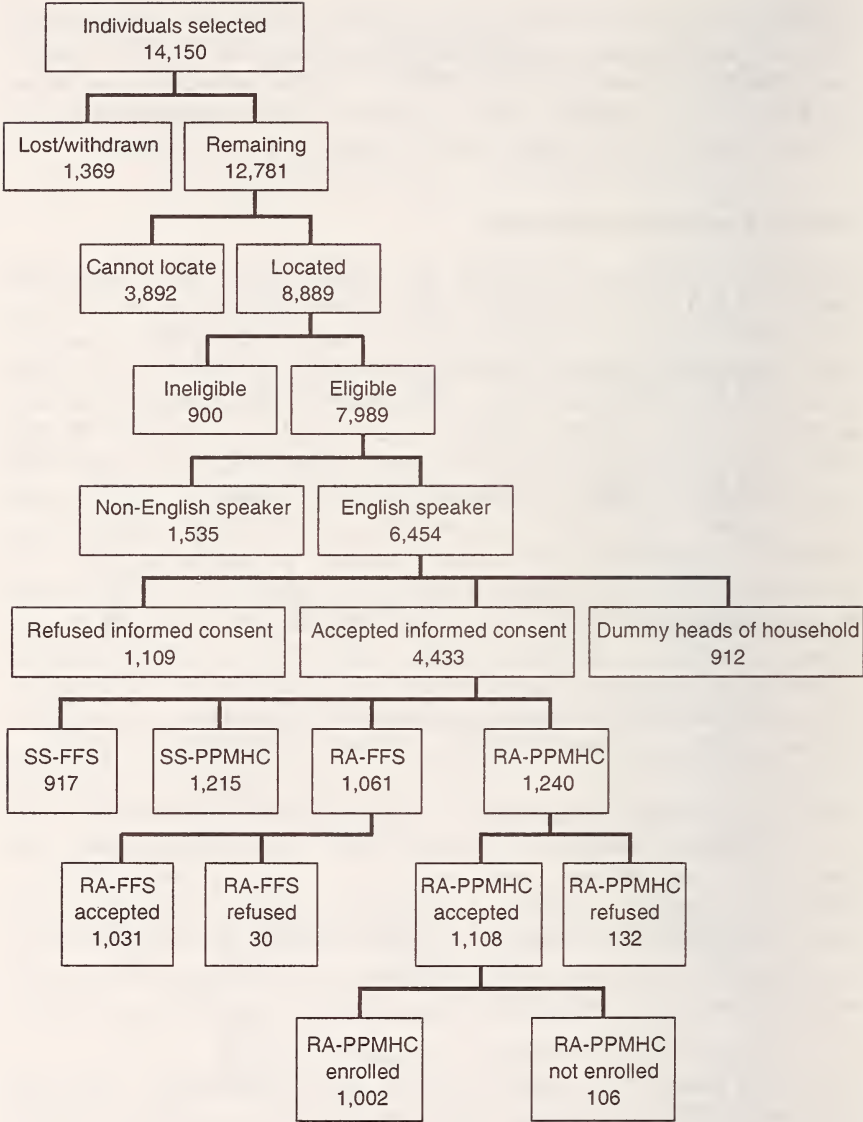
<sup>a</sup>Significant results.

Finally, with a view to pooling the two plan groups, we compared the 1,064 self-selected plan (SS-PPMHC) enrollees with the 185 random assignment plan enrollees (RA-PPMHC). Self-selected plan enrollees had less time on Medicaid and a pregnancy rate comparable to the FFS rate, significantly higher than the random plan enrollees.

## Florida Enrollment Results

Sampling took longer in Florida but was generally more successful than in New York. We sampled more than half again as many cases in Florida. In part this was necessary because Florida had more than three times the number of cases that could not be located, did not speak sufficient English, or were still in the field in a precontact state at the end of our sampling effort. Our initial case count in Florida also included household heads who were either ineligible for Medicaid or had eligibility under a different Medicaid number than the sampled number. The latter is a good illustration of the contrast in approaches to eligibility between the Medicaid programs in New York and Florida. New York chose to extend eligibility to the full spectrum of potential eligibles and took a broad definition of household composition. Florida, on the other hand, used more stringent eligibility requirements, extended eligibility only to a subset of the potential eligibles, and defined new case numbers whenever there was any potential for contribution from individuals outside the household. Whereas in New York it was rare to see more than one Medicaid number within a household, this was quite common in Florida. It would often arise if children residing with their mother, had different natural fathers or because children were sent to live with a relative. For the study, we needed to identify a responsible adult who could agree to study participation on behalf of the child. When this individual was not eligible for Medicaid or had a different number than the one that was sampled, their participation was limited to completing questionnaires.

Figure 4.4 shows the sample status diagram for Florida. Sampling included 14,150 individuals. Ten percent of the sample was either lost or withdrawn before contact from the field at the end of the sampling period. This compares to 6 percent in New York. Just over 30 percent (nearly double the rate in New York) of the remaining sampled cases were nonlocatable. The number was much higher than in New York because many families in Florida, for security reasons, use post office boxes as Medicaid mailing addresses rather than their home address. Another 10 percent were found to be ineligible when we contacted them. The ineligible rate was comparable to that in



**Figure 4.4—Florida Sample Status**

New York. Language was a bigger difficulty in Florida than in New York, as well. Nearly 20 percent (twice the New York rate) of the eligible sample could not speak enough English to participate in the study. Significant portions of the plan's catchment area population spoke only Spanish or Creole. As in New York, the refusal rate at the informed consent stage was significant, 17 percent in Florida as compared to 18 percent in New York. Overall, approximately three-fourths of the eligible participants actually enrolled in the study.

In contrast to New York, Floridians who accepted random assignment and received the plan assignment were much more likely to follow through and actually enroll in the plan. Approximately 10 percent (contrasted with over 50 percent in New York) of those assigned to the plan through the random assignment process, refused study participation once their assignment to the plan was announced. Another 10 percent (contrasted with over 50 percent in New York) failed to follow through on enrollment. At the completion of enrollment we had approximately 1,000 participants in each of the four study groups.

As in New York, we were interested in understanding the effects of sample loss on our final samples. Figure 4.5 shows the four variables, average monthly Medicaid expenditures, average Medicaid family size, average age, and percentage female, for the Florida sample at each stage. Average monthly expenditures were only half the level of expenditures in New York but differed only for the lost/withdrawn group, which had significantly higher expenditures than the group as a whole. We have no explanation for this difference and do not believe that it could be related to the sampling activity, since this information was unknown in our field offices. Medicaid family size was somewhat smaller in the non-English speaking and ineligible groups, whereas age differed only in the non-English speaking group, which was somewhat older.

Because refusals for the random plan were a fairly small part of the total and we found no differences on the four variables discussed above, we concentrated the more detailed comparisons on two subgroup contrasts: (1) the random plan compared to random fee-for-service (RA-PPMHC compared to RA-FFS) and (2) self-selected plan compared to all FFS. These results are shown in Table 4.4. We found no significant differences between the two random assignment groups as shown in columns 1 and 2. Thus, we concluded that the random assignment process was successful in Florida both in sample comparability and in achieving enrollment goals.

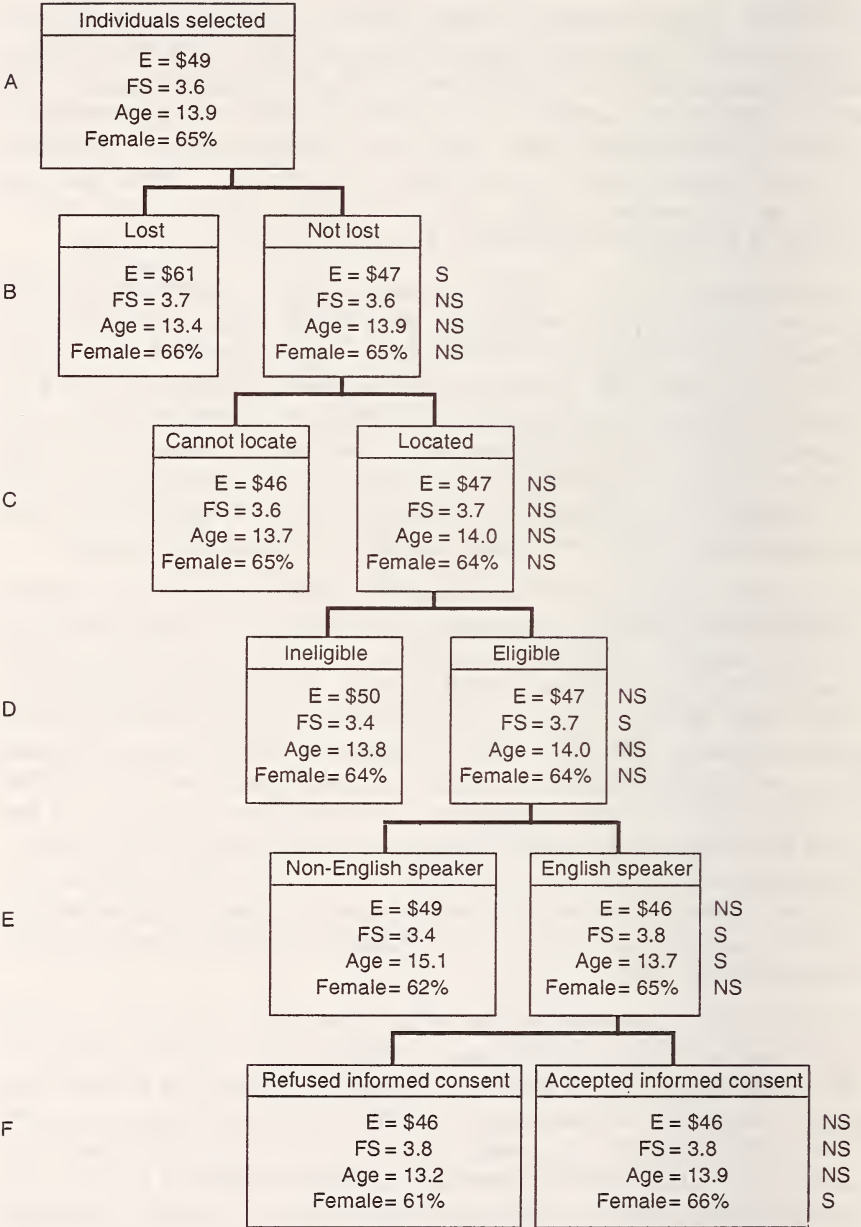


Figure 4.5—Florida Sample Characteristics

**Table 4.4**  
**Florida Sample Comparison Measures**

Measure	Random Assignment		Self-Selected	All
	Plan	FFS	Plan	FFS
Percent female	66	62	69	66
Family size	3.7	3.7	4.1	3.7*
Age	13.8	13.8	13.7	14.6*
Percent black	84	84	93	84*
Education	10.4	10.3	10.6	10.6
Health status	2.3	2.4	2.4	2.5*
Number of chronic conditions	1.3	1.4	1.5	1.3*
Hospitalized last year	.11	.11	.12	.12
Number of medical visits last year	4.6	5.0	4.2	5.0*
Currently seeing physician	.15	.15	.12	.16*
Have regular doctor	.44	.42	.65	.46*
Now pregnant	.02	.02	.02	.02
Average monthly expenditures	\$43	\$46	N/A	\$47
Sample size	1,002	1,031	1,215	3,218

\*Significantly different at the .05 level.

Self-selected plan enrollees in Florida differed from their fee-for-service counterparts on most dimensions (see columns 3 and 4). Prepaid plan enrollees had larger family size, 4.1 compared to 3.7 for the FFS groups, a common finding for HMOs. They also had a larger percentage of black families, 93 percent compared to 84 percent in the FFS group. Because Florida has many Caribbean immigrants, the distinction between black and Hispanic populations is less clear. Medicaid case workers told us that their files classified all Caribbean as black, probably overcounting blacks and underreporting Hispanics. There were no differences in the education level of the head of household, in the percentage female, or in the average age of self-selected plan members.

Interestingly, self-selected plan enrollees were not as healthy as their fee-for-service counterparts as measured both by self-reported health status and the number of chronic conditions. Although a substantially larger percentage of plan enrollees reported having a regular doctor (65 percent compared to 46 percent for the FFS groups), the proportion reporting that they were currently seeing a physician for a medical condition was much lower as was their self-reported prior visit rate (averaging 4.2 annually compared to 5.0 for the FFS group). Both pregnancy and prior hospitalization rates were comparable between the two groups.

Conducting a randomized trial within the Medicaid population presents many challenges. Our experience was markedly different in the two states selected for our study; the experiment failed in New York but was successful in Florida. It is difficult to draw strong conclusions as to the source of this differential success. The Medicaid programs are quite different—one was generous and the other was limited in scope. The prepaid plans differed—one was affiliated with a community hospital and the other with the state's most prestigious medical school. And our incentives differed—in one case we offered to extend the plan's guarantee on Medicaid eligibility and in the other we offered a cash incentive. In New York, the plan had only limited success in enrolling Medicaid-eligibles and we experienced similar difficulties enrolling families in the randomized portion of our study. In Florida, plan growth was quite rapid and, like the plan, we had little difficulty enrolling people in the evaluation.

Selection has always been an important issue for prepaid plans. Like the literature, our evidence is mixed. In New York, plan enrollees tended to be healthier, whereas in Florida plan members were less healthy. In part, adverse selection in Florida inevitably resulted from the plan's early marketing strategy, which focused on recruitment from the hospital's own clinics. As the plan matured, it moved its enrollment emphasis from the hospital's clinics to welfare offices, a strategy that should have reduced the early selection effects.

## 5. FINDINGS IN NEW YORK

### INTRODUCTION

New York has a generous Medicaid program so the plan faced many challenges in developing incentives to enroll. As we saw in the last section these difficulties led both to low plan enrollment and to limited study participation. We begin this section with a more detailed description of the plan and its operating environment. Data and methods are then presented. Next, we follow up on the rate-setting discussion from Section 3 with comparative data on the expected use of those who actually enrolled and the capitation payments the state paid for this enrollment. The medical care utilization comparisons are then discussed. We conclude this section with an analyses of dental utilization.

The New York analyses address these research questions:

#### 1. Capitation and selection:

- How well do the capitation rates set by the state for different age/sex groups of eligibles relate to the variation in Medicaid use?
- How does expected use within the capitation rate groups relate to the capitation?

#### 2. Plan utilization comparisons:

- Do Medicaid recipients enrolled in the PPMHC use less medical care than those in traditional fee-for-service Medicaid?
- If so, does the lower use by Medicaid recipients enrolled in the PPMHC result primarily from less inpatient use or less outpatient use?
- How does dental utilization compare between PPMHC enrollees and traditional Medicaid fee-for-service users?

Our results on the first set of analyses indicate that capitation payments created windfall profits for the PPMHC for infants less than one year old. From the utilization comparisons, we conclude that although actual PPMHC enrollees had lower plan use, this difference results from the enrollment of lower users, that is, favorable selection. Plan users initiated use much less frequently than their fee-for-service counterparts. Once plan users initiated use, the level of use did

not differ from that of fee-for-service patients. This was true for both overall use and dental use. Finally, we conclude that the PPMHC did not save the state any money and may, in fact, have increased state Medicaid payments.

## DESCRIPTION OF THE PPMHC

This PPMHC is sponsored by a 532-bed community hospital in New York. All plan physicians are salaried by the sponsoring hospital and see both PPMHC and FFS patients. The plan is governed by the board of the sponsoring institution and is housed within the hospital. The plan administrator reports to the hospital vice president for ambulatory services.

The plan originally received approval to market to Medicaid-eligibles in the three zip codes immediately surrounding the hospital. This area included a Medicaid population of approximately 20,000 AFDC Medicaid-eligibles. The plan later requested and received permission to market in two adjacent zip codes, adding approximately 15,000 Medicaid-eligibles to the market area. Original enrollment goals for the plan included 10,000 Medicaid, 3,000 Medicare, 4,000 union, 1,000 factory, and 2,000 medically indigent—a total enrollment of 20,000. Actual PPMHC enrollment ranged between 2,000 and 2,500, only a small fraction of the original goals.

A waiver from the Department of Health and Human Services allowed the PPMHC to market with six months of guaranteed Medicaid eligibility for plan enrollees.

The plan provided services primarily through physicians at the medical center. A satellite facility located several blocks from the hospital also provided services to plan members. The plan originally proposed to locate providers in the two new zip codes, as these areas were considered to be medically underserved, but had not done so at the time of this study.

The PPMHC competes with its sponsoring institution, physicians in private practice, and a well-established HMO. Lack of knowledge of HMOs by the Medicaid population and a poor Medicaid service record by the competing HMO were often stated as impediments to the PPMHC development. Unlike most of the other plans, this PPMHC did not have and was not seeking either state or federal designation as an HMO.

All plan physicians were salaried by the sponsoring organization. There was no risk-sharing and physicians treated both plan and FFS

patients. Of the specialists, 90 percent were salaried and the remaining 10 percent were paid fee-for-service. The plan paid its sponsor the Medicaid visit fee for each visit to a staff physician by a plan member. The sponsor in turn used these fees to partially offset staff physician salaries. In the plan, 1,050 patients constituted a full-time primary care workload and PPMHC physicians could not refuse to accept new patients. With 14 primary care providers, plan patients did not constitute a significant portion of participating physicians' workload.

There were no financial incentives for utilization control, but the plan did use both physician screening and utilization review activities to monitor services. The list of monitored services includes inpatient stays, outpatient visits, specialty referrals, radiology, pharmacy, dental visits, optometry, and the use of medical appliances. Physician-specific use profiles were constructed to monitor both excessive and insufficient use patterns; however, no formal sanctions were employed against physicians exceeding plan standards.

## **DATA AND METHODS**

Three sources of data were used for the analyses presented here: (1) the monthly Medicaid eligibility files, (2) the monthly Medicaid claims utilization files, and (3) the plan utilization files. The analyses of capitation rates and expected use rely only on the first two data sources, whereas the utilization comparisons use all three sources.

### **Dependent Variables**

We constructed monthly records of medical use for FFS and PPMHC participants. The person-month serves as the unit of analysis because Medicaid eligibility is determined month by month. The dependent variable consists of monthly Medicaid expenditures for each eligible Medicaid participant in the sample. For FFS users, the expenditures include all payments by the Medicaid agency to FFS medical providers. For PPMHC enrollees, the expenditures consist of all payments by the plan to its medical providers, who bill the plan at established Medicaid rates. (The plan received a monthly capitation from the state but paid its hospital sponsor on a fee-for service basis for medical services provided.) We aggregated medical payments on behalf of each individual within each month to determine the level of expenditure and whether the expenditure included inpatient use or not. Four dependent variables were constructed as part of a four-equation model of health services use (explained below in the subsection entitled *Multivariate Methods*):

- DUMEXP—whether the enrollee used any medical service in the month.
- DUMINPAT—conditional on use, whether any inpatient use occurred in the month regardless of the admission date (e.g., for hospital stays that overlapped more than one month, DUMINPAT was coded as 1 in each month of the stay).
- TOTEXP1—total monthly expenditures for individuals with only ambulatory use.
- TOTEXP2—total monthly expenditures for individuals with inpatient expenses.

In calculating monthly expenditure totals, we included all services covered by the PPMHC. In particular, our measure included hospital inpatient and outpatient services (including emergency room visits), neighborhood clinic visits, physician office and hospital visits (including charges for surgery, consultations, and other procedures provided in hospitals), dentistry, podiatry, mental health visits, optometry, pharmaceuticals, and durable medical equipment. Expenditures for hospital-based physician services (radiology, pathology, and anesthesiology) were included in either the hospital inpatient payment or the outpatient clinic payment, depending on the setting in which care was delivered.

Expenditures were attributed to the month in which service was provided. If a hospital stay overlapped more than one month, inpatient expenditures were allocated to each month based on the proportion of the stay occurring in that month. In calculating admission rates, a hospital stay was attributed only to the month in which the admission began (so that each admission is counted just once).

Expenditures for PPMHC enrollees who used out-of-plan services were attributed to the PPMHC as long as the individual continued to be enrolled in the PPMHC. FFS claims for PPMHC enrollees may include family planning services (including abortion), services excluded from the PPMHC plan's list of covered services, and services that may have been referred to an FFS provider because of capacity constraints or other factors. The Medicaid agency pays separately for family planning services provided in the FFS sector and for services for which the PPMHC negotiated an exclusion agreement. The PPMHC is held financially liable for the third category of services. Regardless of the source of payment, all use by PPMHC enrollees was attributed to the PPMHC. Because the PPMHC pays hospitals and freestanding medical clinics at the individual facility's Medicaid payment rate, the Medicaid agency and the plan pay the same amount

for inpatient and outpatient services purchased from the same providers for FFS and PPMHC users, respectively.

### **Explanatory Variables**

Additional explanatory variables other than plan status adjust for known correlates of health services utilization patterns, including the Medicaid recipient's age, sex, family size, duration of Medicaid eligibility during the 12-month pre-enrollment phase of the study, and for PPMHC enrollees, the number of months in the capitated plan before the current month. These variables were obtained from Medicaid eligibility files. The first two, age and sex, reflect demographic determinants of utilization commonly used in calculating PPMHC capitation rates. Age and sex characteristics were combined to form nine categorical variables as shown in Table 5.1. The specifications were defined so as to give the best fit to the data subject to robustness on a test sample. Family size is typically an important determinant of medical care use and is included in the current specification. Four family size categories were created designating families of size 1 or 2, 3, 4, or 5 or more. Variables indicating the duration of Medicaid eligibility and PPMHC enrollment were included as continuous variables (with maximum values of 12 months). Variable definitions are given in Table 5.1.

### **Multivariate Methods**

To conduct the multivariate analyses comparing health services resource use between FFS and PPMHC Medicaid recipients, we adapt the four-equation model of the demand for medical care developed by Duan et al., (1983). The first equation is a logit estimator that predicts the probability of any use (DUMEXP) during the month. A second logit equation predicts the probability of having inpatient use (DUMINPAT) during the month conditional on having had any use that month (DUMEXP=1). A third OLS equation predicts the level of monthly expenditures conditional on having had some outpatient use but no hospitalization (DUMEXP=1 and DUMINPAT=0) during the month. The dependent variable (monthly expenditures) was transformed by its natural logarithm to achieve a more normal distribution of residuals. The fourth equation predicts the level of monthly expenditures conditional on having had a hospital stay (DUMINPAT=1) during the month. Because expenditures for individuals who were hospitalized and those who were not form two distinct distributions, they are modeled separately as equations 3 and 4. In preliminary

**Table 5.1**  
**Definition of Variables**

Variable	Definition
<b>Dependent variables</b>	
DUMEXP	Any medical care use in a month
DUMINPAT	Any inpatient use in a month
TOTOUTP	Total monthly expenditures for those with outpatient care only
TOTINP	Total monthly expenditures for those with inpatient care
<b>Explanatory variables</b>	
SS_FFS_A	Self-selected FFS
SS_PPMHC_A	Self-selected HMO
RA_FFS_A	Randomized FFS (referent category)
RA_PPMHC_A	Randomized HMO
SS_FFS	Enrolled in self-selected FFS
SS_PPMHC	Enrolled in self-selected HMO
RA_FFS	Enrolled in randomized FFS (referent category)
RA_PPMHC	Enrolled in randomized HMO
NOENROLL	Never joined assigned HMO and used FFS instead
SWITCHED	Switched out of the HMO and used FFS
A00_02	Age less than 2 years old
A03_05	Child 3–5 years old
A06_13	Child 6–13 years old (referent category)
F14_17	Female 14–17 years old
F18_30	Female 18–30 years old
F31_44	Female 31–44 years old
FOVER44	Female over 44 years old
M14_21	Male 14–21 years old
MOVER21	Male over 21
FAMSIZ1	Family of size 1 or 2 (referent category)
FAMSIZ3	Family of size 3
FAMSIZ4	Family of size 4
FAMSIZ5	Family of size 5 or more
NEWBORN	Infant first 4 months of life
ELIG_PRE	Months of Medicaid eligibility in prior year
PPMHC_MOS	Months of PPMHC enrollment prior to current month, starting from the prior year period, for PPMHC members only

analyses, we found no significant plan effect on the size of inpatient episodes. However, there were significant age differentials. Because of the small number of months with hospital use, the fourth equation was not modeled using OLS regression. Instead, we calculated the mean monthly expenditure of individuals having a hospital stay for five age groups: children (males and females) less than 6 years of age, children aged 6 to 13, females aged 14 to 30, females aged 31 to

44, and all other adults (females older than 44 and males older than 14). In the analyses of capitations and expected use, we calculated mean monthly expenditures for newborns and non-newborns only.

There are two potential sources of correlation in utilization patterns across observations in our sample. Because the data consist of Medicaid families, the health care use of individual family members may be correlated. Moreover, because we observe the same individual for up to 12 months, the health care use of individuals across time may be correlated. As a result, the standard errors of the estimated coefficients may be understated, thereby leading to a possible overstatement of the significance of some coefficients. We correct the inference statistics in the multivariate estimates for this intracluster correlation using Huber's (1967) formula for the variance of robust regression. (The results in Tables 5.11, 5.12, and 5.14, below, report the adjusted standard errors.)

To compare differences in resource use by FFS and PPMHC recipients, we calculate the predicted probabilities of use and the predicted expenditures for each plan category. Because logit is a nonlinear operator, it is inappropriate to substitute mean values into the estimated equations. Instead, we calculated predictions for each individual by substituting the individual's characteristics (i.e., the values of the independent variables) into the estimated equation and average these individual estimates.

## RESULTS COMPARING CAPITATIONS AND SELECTION

In this subsection, we address our research questions on capitation and selection. First we look at how well the capitation rate groups relate to actual variations in use. Then we look at how predicted use within these rate groups compares to the actual capitation. Our methodology contrasts what PPMHC enrollees would have spent in the fee-for-service system with the actual capitation payments. Our models are estimated only for fee-for-service users, then predictions are made for the self-selected PPMHC group. The study obtained adequate enrollment in all of these groups, so we have more than enough data for this analysis. Careful attention is given to model validation efforts that are described. Finally, our results show that the plan capitations generally exceed expected use and that the difference is particularly large for some rate groups.

For this set of analyses, we use models of FFS Medicaid use based on age, sex, family size, and eligibility to predict the level of use that people who self-selected the PPMHC would have had if they had re-

mained in FFS. We began by estimating our four-part model on fee-for-service users only. In step two, we apply this model to the characteristics of individuals who self-selected into the PPMHC. In this way, we estimate what plan enrollees would have spent on medical care had they remained in the FFS system. The last step compares the estimated FFS expenditures with actual capitation rate for each enrollee. Comparing the expected expenditures and the capitations for different enrollment groups allows us to identify groups that yield above average profits or losses to the PPMHC. This section uses data from one year before the enrollment in the evaluation and uses only the FFS enrollees for model estimation.

Our methodology relies on the goodness of fit of the FFS model. The estimates derived from a model that fits poorly provide an unreliable guide to the relationship between expected FFS use and the capitation. Therefore, we have carefully modeled FFS use, while relying on readily observed independent variables. To assure that we were not overfitting a particular sample, we employ a split sample technique. In this technique, the relationship between the FFS Medicaid use and personal characteristics is estimated on a randomly chosen half of all the individuals, called the estimation sample. The estimated equations are then used to predict use for the remaining FFS observations, called the test sample. If the actual and estimated FFS use by the test sample are not significantly different from each other, we conclude that the estimated equations fit the underlying structure and do not overfit the particular observations of the sample on which they are estimated.

### **The Estimation Equations**

Table 5.2 presents the estimated parameters for the four equations based on the estimation sample. Each equation explains a significant amount of variation. The percentage of explained variation in Model 3 is 6.7 percent, about 30 times higher than the explanatory power of the Average Adjusted Per Capita Cost (AAPCC) methodology regressions for Medicare HMO payments, which explain only 0.6 percent of the variation with demographic variables.

The age and sex categories are important predictors of Medicaid use. Probabilities of both any use and of conditional inpatient use are highest for infants four months and under, who are counted in both the age 0–2 category and in the newborn category. However, model four shows that the cost per hospitalization for a newborn averages \$546 less than that for older children or adults. Although nearly all

**Table 5.2**  
**Four-Part Model of Preperiod FFS Medicaid Use**

Variable	Model 1 Probability of Any Use (LOGIT)		Model 2 Probability of Inpatient Use (LOGIT)		Model 3 Level of (ln) Ambulatory Use (OLS)		Model 4 Mean Medical Use/If Any Inpatient (OLS)
	$\beta$	S.E.	$\beta$	S.E.	Parameter Estimate	S.E.	
INTERCEPT	-0.015*	0.05	-4.284*	0.15	4.189*	0.03	Newborn=\$1,498
NEWBORN	0.569*	0.12	2.564*	0.15	0.167*	0.05	Non-newborn=\$2,044
A00_02	0.794*	0.06	0.923*	0.18	0.075*	0.03	
A03_06	0.286*	0.05	-0.276	0.23	-0.101*	0.03	
M14_21	-0.559*	0.06	0.224	0.27	0.091*	0.04	
MOVER21	0.125	0.11	0.926*	0.25	0.552*	0.07	
F14_17	-0.116	0.06	0.673*	0.24	0.067*	0.03	
F18_30	0.387*	0.04	1.481*	0.15	0.338*	0.03	
F31_44	0.586*	0.05	0.955*	0.16	0.507*	0.03	
FOVER44	0.633*	0.10	0.663*	0.28	0.648*	0.05	
EMN1_6	-0.308*	0.09	0.509*	0.14	0.073	0.05	
EMN7_10	-0.326*	0.07	0.472*	0.12	0.055	0.04	
FAMSIZ3	-0.015	0.05	-0.266*	0.10	-0.075*	0.03	
FAMSIZ4	-0.055	0.06	-0.059	0.11	-0.132*	0.03	
FAMSIZ5	-0.148*	0.06	-0.123	0.13	-0.136*	0.03	
$\chi^2=2243$		N=64935	$\chi^2=2111$		$R^2=.068$		N=33,579

\*p < 0.05.

newborns have some inpatient care, the infants are generally healthy and their hospitalizations are not as costly as those for people who are admitted to the hospital because of sickness or a need for surgery.

For both boys and girls, probabilities fall with age through ages 6–13 (the excluded category in the regression). The probability of any use continues to decline during the teenage years for both boys and girls. Beyond age 13, important sex differences in use appear. Conditional on having any medical care use, girls age 14 to 17 have a steep rise in inpatient use, associated with pregnancy-related services (Model 2). The probability and the levels of ambulatory use increase monotonically with age for women, although hospitalizations peak in the 18–30 age range when birthrates are highest.

Individuals who are enrolled in Medicaid for only part of the year (less than 11 months) are less likely to use any medical care in a given month. This may reflect the difficulty newly eligible individuals may have in locating medical providers who accept Medicaid patients. However, given that a new Medicaid enrollee has used some care, the probability of having a hospitalization and the level of ambulatory use are higher.

Overall, people in larger families use less medical care than people in two-person families. This is true of both inpatient and ambulatory care. Individuals in the largest families (five or more persons) are significantly less likely to use any care. Relative to people in two-person families, people who live in larger families spend less when they do use health care. Members of larger families are also somewhat less likely to be hospitalized (the effect is significant for those in families with three members).

### How Well Does the Model Fit on the Estimation Sample?

As a first test of how well the estimated equation fits the data, we compare the predicted expenditures and the average actual expenditures for the estimation sample. Because logit is a nonlinear operator, it is inappropriate to merely substitute mean values into the estimated equations. Therefore, independent variables were substituted into the estimated equation separately for each individual in the sample. The logits were retransformed into probabilities and the estimate of log expenditures were retransformed into dollars using the formula:

$$E(X) = \exp \{ (bX) + (s^2/2) \}$$

The average expenditures predicted for individuals in the estimation sample are shown in Table 5.3 along with the simple average of actual medical use. Better than 75 percent of the predicted values fall within 1.96 standard errors of the actual mean values. Therefore, the predicted equation appears to provide a good fit to the data on which it was estimated.

### How Well Does the Model Fit on the Test Sample?

Providing a good fit to the data on which it was estimated is not a strong criterion, since it is possible to “overfit” data by allowing the unique characteristics of a particular sample to determine the estimated coefficients. To guard against this overfitting, we randomly split the total sample into two parts—one-half was used for estimation and the second half, the test sample, was used only for validation. If the estimated equation fits well on both the estimation and the test sample, we can conclude that it does not reflect merely the unique characteristics of a single sample but would represent well any random sample from that population.

Table 5.4 compares the expenditure levels predicted for the test sample with the actual raw means for the test sample. Predictions were made by substituting individual values for the independent variables for each person in the test sample. Estimates were retransformed and averaged in the same manner as for the estimation sample. Better than 95 percent of the predicted values fall within 1.96 standard errors of the actual mean values.

As a second test of the robustness of the estimation, we applied the same structure to both the estimation and the test sample, and tested for differences in the coefficients using a Chow test. We found no significant differences between the estimates for the probability of any

**Table 5.3**

#### Comparison of Predicted and Actual Values: Prediction Sample

	Raw Mean	S.E.	Predicted Mean
Total monthly expenditures	\$92	\$2.1	\$92 <sup>a</sup>
Probability of any use	.535	.003	.535 <sup>a</sup>
Probability of inpatient	.016	.0007	.015 <sup>a</sup>
Level of monthly outpatient only use	\$112	\$1	\$111 <sup>a</sup>
Level of monthly use if inpatient	\$2,002	\$83	\$2,037 <sup>a</sup>

<sup>a</sup>Not significantly different from raw mean.

**Table 5.4**  
**Comparison of Predicted and Actual Values: Test Sample**

	Raw Mean	S.E.	Predicted Mean
Total monthly expenditures	\$88	\$1.92	\$91 <sup>a</sup>
Probability of any use	.532	.003	.536 <sup>a</sup>
Probability of inpatient	.016	.0007	.015 <sup>a</sup>
Level of monthly outpatient only use	\$113	\$1.0	\$111 <sup>a</sup>
Level of monthly use if inpatient	\$1,891	\$82	\$2,038 <sup>a</sup>

<sup>a</sup>Not significantly different from raw mean.

use (chi-square=13.1; the 95 percent confidence interval for 15 degrees of freedom is 25.0). There were also no significant differences between the coefficient vectors fit on the two samples for the conditional probability of outpatient use ( $F_{29,28000}=1.12$ ) or for the conditional probability of inpatient use ( $F=0.6$ ).

We therefore conclude that the estimated model provides a good fit to the total population of Medicaid recipients in the catchment area, not only to the observations in the estimate sample. Moreover, we have seen that the amount of medical use predicted for the test sample corresponds closely to the actual level of use.

### **How Do Capitation and Projected Use Compare for Self-Selected Plan Enrollees?**

We next re-estimate the same structure on the entire sample (estimation plus test sample observations). The resulting equations have coefficients not significantly different from those found for the estimation sample (as shown by the Chow test). Into these equations, we substitute the observed characteristics for Medicaid eligibles who had chosen to enroll in the PPMHC and retransform, as before, to estimate use for each individual. These individual estimates are then averaged within groups that correspond to the age/sex categories used by the state in setting rates.

Table 5.5 shows how the estimated monthly use compares to the size of the capitation paid by the state to the PPMHC. The capitation figures exclude the 8 percent savings factor applied by the state to expected use to "assure savings" from PPMHC enrollment. The monthly capitation received by the PPMHC also is reduced by 4.6 percent to offset the effect of guaranteed eligibility in increasing the numbers of

**Table 5.5**  
**How Do Capitation and Projected Use Compare for**  
**Self-Selected Plan Enrollees?**  
**(in dollars)**

Capitation Group	Capitation <sup>a</sup>	Estimated Use	Difference
All groups	110	90	+20
Age <1	288	165	+123
Females 1-14	66	64	+2
Males 1-20	75	60	+15
Females 15-20	110	94	+16
Age 21-64	157	134	+23

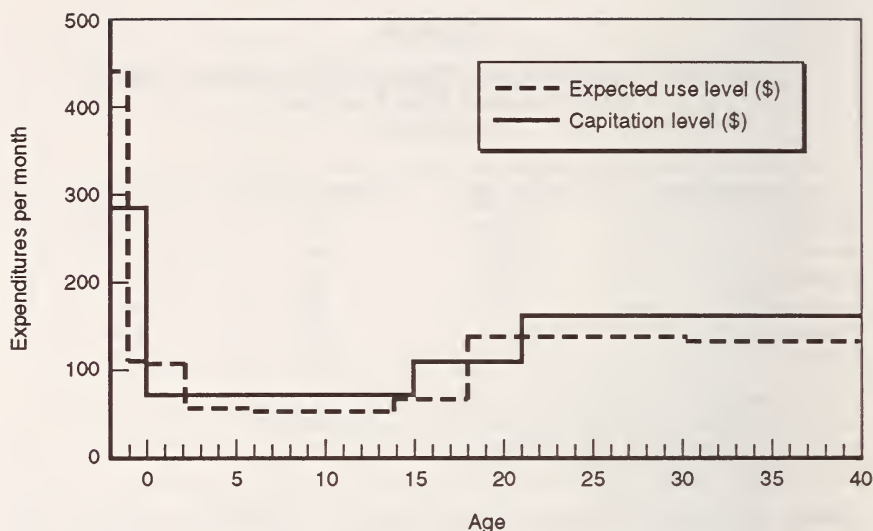
<sup>a</sup>The capitation excludes the 8 percent reduction the state uses to assure "savings" and the 4.6 percent reduction for guaranteed eligibility.

months the state will pay Medicaid benefits. Because the additional months represent a real cost to the state, the capitation rates reported in Table 5.5 do not include this reduction.

Overall, Medicaid members of the PPMHC could have been expected to incur average costs of \$90 per month had they been in the FFS system, but the monthly capitation paid by the state for members of the PPMHC averaged \$110. (New York State calculated that if the PPMHC enrollment was representative of the Medicaid population in its catchment area, the monthly costs would average \$106. However, the average capitation for PPMHC enrollees is higher than the state expected, because the PPMHC enrollees fall disproportionately into the groups with higher capitation rates.)

As the regression equations also indicate, both the capitation rates and expected use vary with age and sex. However, for every rate-setting group, the capitation exceeds the expected use. For some groups, such as girls between the ages of one and fourteen, the difference between expected use and the capitation rate is only \$2. However, for infants under one year old the difference amounts to \$123 per month.

How can the capitation rates, which were based on use data, differ so widely from estimated use? The answer lies in the fact that expected use is not constant within a rate group. This fact is illustrated in Figure 5.1, which plots the capitations by rate groups and the actual average use for groups that we found to be significantly different in our regression analysis. For example, the state has established a capitation of \$288 per month for children under one year old. However, newborns (age 0-3 months) have average monthly expenditures



**Figure 5.1—Capitation and Expected Use: Females**

of \$445, and children aged 4 to 11 months have mean monthly expenditures of only \$109. The same is true in other rate groups. The capitation for a group is an average of high rates at the earlier ages and lower rates at later ages, until age 14, when the pattern reverses.

If Medicaid-eligibles who enrolled in a PPMHC remained in the pre-paid plan, this would have little import, because expected use and capitations would be equal “on average” over time. However, newborns are the one group for which this does not hold. Although expected use is high for the first three months of life, average expenditures fall rapidly after the risk of expensive neonatal care has passed. Thus, if the PPMHC could enroll infants after the first few months of life, it could obtain the high reimbursement level but face only modest levels of expected costs.

In fact, because the state’s enrollment process makes it impossible for the PPMHC to enroll infants at birth, the PPMHC has a significantly smaller percentage of infants under four months old than the FFS system. In the FFS system, children under four months old account for 37 percent of all the infants under a year (Table 5.6). Statistically, one would expect 33 percent of all children to fall in that category. However, among PPMHC enrollees, only 20 percent of the children under a year of age are less than four months old (Table 5.6). Significant differences also exist between the PPMHC and FFS populations if we consider all children under two years.

**Table 5.6****How Does Enrollment of Infants Differ Between FFS and the Prepaid Plan?**

	% of Enrollment Months for Infants Age 0–3 Months		
	FFS	Plan	
All infants <12 months	37%	20%	p < .0001
All infants <24 months	18%	9%	p < .0001

The PPMHC enrolls a smaller proportion of newborns because children born to mothers who are eligible for Medicaid are automatically enrolled in the FFS system, whether or not the mother is enrolled in the Medicaid PPMHC. Thus, the child's delivery and any neonatal intensive care costs are automatically charged to the FFS system. This allocation of all neonatal costs to the FFS system further inflates the average FFS costs for children under one year of age and increases the PPMHC capitation payment for infants.

In the next subsection, we re-estimate our four-part model on prospective data, collected in the 12 months following enrollment, to compare PPMHC and traditional FFS utilization across the four patient groups in our study: (1) self-selected PPMHC, (2) self-selected FFS, (3) randomly assigned PPMHC, and (4) randomly assigned FFS. We perform this estimation by both assigned plan and actual plan because a significant percentage of people assigned to the PPMHC never enrolled.

## RESULTS ON PLAN UTILIZATION COMPARISONS

This subsection addresses the research questions on medical utilization comparisons across the plan groups. Specifically, we look at whether PPMHC enrollees use less care than FFS Medicaid enrollees. Next, we consider whether any differences are due to inpatient or outpatient care. Finally, we return to the questions about the cause of observed differences and find that in New York our observed differences are due entirely to selection by the plan of patients who use lower levels of care.

In the last subsection we created a model of expected FFS use for those who voluntarily enrolled in the PPMHC and compared it to plan capitation payments. In this subsection, we compare actual use in the two systems of care. We also have the opportunity to compare actual PPMHC use to the capitation received for the post-enrollment

period. Here we see that actual as well as expected use created significant profits for the PPMHC.

Table 5.7 presents the mean monthly expenditures by type of health care use for the system of care used and original group assignment. Striking differences in utilization levels and patterns are noted between the FFS assignment groups and the PPMHC assignment groups. Within the fee-for-service system, the self-selected and randomly assigned groups had quite similar patterns. Total spending averaged \$87–\$90 per month and inpatient use accounted for \$26 of this total. Just over half of the sample used some kind of care in each month with an inpatient admission rate near 1 percent per month.

In contrast, monthly expenditures for the two prepaid plan groups averaged \$60–\$61 per month, significantly less than the FFS groups. Ambulatory use in the plan averaged \$36–\$38 per month, about 59 percent of the FFS level. This was largely accounted for by a lower probability of having an outpatient visit. Although slightly more than half of all FFS participants used care in any month, only one-third of PPMHC enrollees did. Inpatient admission rates and average inpatient expenditures were similar across the groups.

Evidence of self-selection of the better risks into the PPMHC comes from data on the average use of people who were randomly assigned to the plan but who never enrolled. Their FFS use averaged \$100 a month, significantly higher than either the previously noted within-plan use of \$60–\$61 or the \$87–\$90 monthly use by the FFS assignment groups.

**Table 5.7**  
**Mean Monthly Medicaid Use by System Used**

	FFS		PPMHC			
	Self-Selected	Random Enrolled	Self-Selected	Random Enrolled	Never Enrolled, Used FFS	Switched to FFS
Total monthly use	\$ 87	\$ 90	\$ 60	\$ 61	\$100	\$106
Ambulatory use	\$ 61	\$ 64	\$ 38	\$ 36	\$ 67	\$ 69
Inpatient use	\$ 26	\$ 26	\$ 21	\$ 25	\$ 32	\$ 38
Probability of any use	.52	.53	.35	.29	.56	.51
Admission rate	.010	.011	.010	.009	.010	.014
No. of person-months	12,992	13,196	7,620	2,014	11,132	2,798

Additional evidence on selection effects comes from PPMHC disenrollees. Not all individuals assigned to the plan remained in the plan for an entire year. People who enrolled in the plan but switched back to the FFS system averaged significantly more medical use (\$106 per month) than people who remained in the plan. This greater use after leaving the plan and returning to FFS care was also markedly higher than the \$87–\$90 per month used by the average Medicaid participant in FFS. Thus, their greater use reflects not only the fact that the FFS use exceeds within-plan use, but also that among Medicaid-eligibles, those who switched out of the plan were relatively heavy users of medical care. It thus appears that people with a greater demand for medical care were overrepresented in the group who dropped out of the plan.

We explore the utilization patterns of PPMHC disenrollees further in Table 5.8. The people who switched out of the plan not only had greater use after they left the PPMHC, they also used more care while they were enrolled in the PPMHC. They averaged \$80 a month within the PPMHC compared to the average of \$60–\$61 for the entire PPMHC user sample. As in the comparisons with FFS, higher ambulatory use (\$52 per month) accounted for most of the difference between the people who switched out of the PPMHC and those who remained in the prepaid plan.

Thus, we see that the people with the greatest demand for care never enroll, or if they do enroll, drop out of the plan. This leaves people with lower use of care as continuing plan enrollees.

To examine whether these selection effects totally account for the lower apparent use of PPMHC participants, we contrast the average

**Table 5.8**

**Utilization Patterns of PPMHC Disenrollees Before and After Disenrollment**

	All PPMHC Use	Switchers While in PPMHC	Switchers in FFS
Total monthly use	\$ 60	\$ 80	\$106
Ambulatory use	\$ 38	\$ 52	\$ 69
Inpatient use	\$ 22	\$ 28	\$ 38
Probability of any use	.34	.42	.51
Admission rate	.010	.014	.014
No. of person-months	9,634	1,608	2,798

monthly use of all individuals randomly assigned to FFS with the average use of those randomly assigned to the PPMHC, whether or not they actually enrolled. Table 5.9 shows that, on average, the random assignment FFS group consumed \$91 per month in health care, and the random assignment PPMHC group used \$94 per month. The use of medical care by people assigned to the PPMHC is actually higher than that of people assigned to FFS when use in both systems of care is accounted for.

PPMHC participants' lower use of the care while they are in the plan appears to be entirely accounted for by selection effects because total costs for those assigned to the PPMHC averaged more than total costs for people assigned to FFS. Even had the PPMHC reduced use for its plan participants relative to what they would have used in FFS, such a large portion of the randomly assigned group selected themselves out of the PPMHC that even a high level of "technical efficiency" on the part of the PPMHC probably could not have affected overall levels of use.

## MODELING MEDICAL USE

The comparisons of mean monthly expenditures among the groups revealed that while they were enrolled in the PPMHC, individuals used less medical care than those who remained in FFS, but the presence of the PPMHC actually increased the overall costs to the state of a randomly selected sample of Medicaid recipients (Table 5.9). We defined the latter concept as "operational efficiency" and contrasted it to "technical efficiency," the ability of the PPMHC to control health care use for the people it does serve.

Table 5.9  
Mean Monthly Medicaid Use by Assigned Plan

	Fee for Service		Prepaid Plan	
	Self-Selected	Random	Self-Selected	Random
Total monthly use	\$ 86	\$ 91	\$ 79	\$ 94
Ambulatory use	\$ 60	\$ 64	\$ 49	\$ 63
Inpatient use	\$ 26	\$ 26	\$ 30	\$ 31
Probability of any use	.52	.53	.42	.52
Admission rate	.010	.011	.012	.010
No. of person-months	13,369	13,331	12,040	13,471

To further evaluate the “technical and operational efficiency” of the prepaid plan, we use multivariate methods. These methods are necessary to control for the fact that the health care needs of people who remained in the PPMHC appear to differ substantially from those who selected themselves out of the PPMHC. The four-part model that we estimate will also elucidate whether the prepaid plan reduces use in outpatient or inpatient care and whether it controls the likelihood of having a medical encounter or the size of the medical episodes that are treated. Means and standard deviations by assigned group for variables used in the regression analyses are shown in Table 5.10.

**Table 5.10**  
**Variable Means by Assigned Group**  
**(standard deviation)**

Variable	Fee-for-Service		Prepaid Plan	
	Self-Selected	Random	Self-Selected	Random
A00_02	0.07 (0.25)	0.05 (0.23)	0.10 (0.31)	0.05 (0.22)
A03_05	0.11 (0.31)	0.11 (0.32)	0.16 (0.37)	0.12 (0.32)
A06_13	0.30 (0.46)	0.33 (0.47)	0.30 (0.46)	0.32 (0.47)
F14_17	0.06 (0.23)	0.07 (0.26)	0.04 (0.21)	0.08 (0.26)
F18_30	0.15 (0.36)	0.14 (0.35)	0.19 (0.39)	0.14 (0.35)
F31_44	0.15 (0.36)	0.15 (0.36)	0.10 (0.30)	0.15 (0.35)
FOVER44	0.04 (0.20)	0.03 (0.18)	0.03 (0.16)	0.05 (0.21)
M14_21	0.10 (0.30)	0.08 (0.27)	0.05 (0.22)	0.07 (0.25)
MOVER21	0.02 (0.15)	0.03 (0.16)	0.02 (0.15)	0.03 (0.18)
FAMSIZE1	0.18 (0.38)	0.15 (0.35)	0.12 (0.33)	0.15 (0.35)
FAMSIZE3	0.34 (0.47)	0.31 (0.46)	0.27 (0.44)	0.28 (0.45)
FAMSIZE4	0.24 (0.43)	0.30 (0.46)	0.25 (0.43)	0.34 (0.43)
FAMSIZE5	0.24 (0.43)	0.25 (0.43)	0.36 (0.48)	0.24 (0.43)
ELIG_PRE	11.64 (1.36)	11.72 (1.20)	11.40 (1.72)	11.53 (1.31)
PPMHC_MOS	5.71 (3.93)	4.71 (3.54)	11.95 (5.59)	5.93 (3.63)

The means presented above do not account for the fact that individuals appear in the sample in every month they were eligible for Medicaid. Because health care use is correlated from month to month for the same individual and across individuals with the same family, the standard errors of the reported means are understated. The regression analysis accounts for the correlation across observations by applying a variance components correlation.

Table 5.11 presents estimates of the probability of using any medical care in a month, the probability of having inpatient care, given that any medical care was used, as well as separate levels of expense for those who used care but were not hospitalized and those with inpatient expense. The explanatory variables relate to Medicaid enrollment group, age, sex, family size, and prior duration of Medicaid and plan enrollment. In Table 5.11, the Medicaid enrollment groups are defined by the system of care that individuals actually used in a particular month. Two variables identify the self-selected FFS and prepaid plan groups. As in Table 5.7, there are three PPMHC assignment groups: those who remained in the PPMHC, those who switched out of the PPMHC, and those who never enrolled in the PPMHC. The random assignment FFS group is the excluded category, against which comparisons are made.

The age, sex, and family size variables show the expected relationship with monthly health care use. The monthly probability of having a visit declines with age for children. Children under 6 have significantly higher probability of having a visit in any month than do children aged 6 to 13 (the reference category in the regression). Among these younger children, we found no significant differences in health care use by sex of child. However, sex differentials in the use emerge during adolescence. Boys between 14 and 21 years of age are significantly less likely than younger children to use any medical care in a month. Although teenage girls aged 14 to 17 have somewhat lower use than younger girls, this difference is not statistically significant. Women in prime childbearing ages have significantly greater probabilities than school-age children of having a visit, as do females over 44 and men over 21.

The amount of monthly outpatient expenditure is also greater for adults than for children. Compared to children aged 6 to 13, all groups of men and women over 14 had significantly greater use, conditional on having any use.

**Table 5.11**  
**Monthly Health Care Use by New York Medicaid Enrollees by Actual FFS or Prepaid Plan**

Variable	Probability of Use (LOGIT)		Probability of Inpatient Use If Any Use (LOGIT)		Log Monthly Ambulatory Expense If Outpatient Use (OLS)		Average Monthly Expense If Inpatient Use (OLS)	
	$\beta$	S.E.	$\beta$	S.E.	$\beta$	S.E.	Category	Expense
INTERCEPT	-0.318**	0.189	-3.621***	0.414	4.230***	0.105		
SS_FFS	-0.069	0.063	-0.115	0.144	-0.020	0.035	Child < 6 (N=97)	\$1,797
SS_HMO	-0.782***	0.116	0.095	0.360	0.122**	0.067		
RA_HMO	-1.039***	0.139	0.296	0.314	0.073	0.095		
SWITCHED	-0.135	0.116	0.152	0.274	0.201***	0.065	Child 6-13 (N=81)	\$2,102
NOENROLL	0.100*	0.066	-0.105	0.151	0.012	0.033	Female 14-30 (N=236)	\$2,423
A00_02	0.855***	0.067	0.768***	0.209	0.025	0.035		
A03_05	0.433***	0.052	-0.029	0.233	-0.057**	0.034		
F14_17	-0.005	0.069	0.939***	0.247	0.032***	0.042	(N=96)	
F18_30	0.389***	0.051	1.408***	0.165	0.371***	0.030		
F31_44	0.638***	0.052	0.704***	0.189	0.547***	0.030	Other adult (N=69)	\$3,468
FOVER44	0.702***	0.106	0.628**	0.307	0.760***	0.063		
M14_21	-0.475***	0.067	0.709***	0.268	0.095**	0.042		
MOVER21	0.191*	0.128	0.707**	0.375	0.596***	0.081	Female 31-44	\$3,104
FAMSIZE3	-0.140**	0.068	-0.214*	0.157	-0.162***	0.038		
FAMSIZE4	-0.147**	0.071	-0.164	0.164	-0.202***	0.039		
FAMSIZE5	-0.349***	0.077	-0.014	0.174	-0.191***	0.043		
ELIG_PRE	0.034**	0.015	-0.058**	0.032	-0.003	0.008		
HMO_MOS	-0.000	0.007	0.007	0.022	-0.007**	0.004		
N	49758		24774		24195		626	
R <sup>2</sup>					0.080			

NOTES: A variance components correction was applied to the first three equations of the four-part model to adjust for possible intraclass correlation in utilization patterns within families and across time for individuals. Newborns and non-English-speaking Medicaid recipients were deleted from the sample.

\*\*\*Significant at  $p < 0.01$ , two-tailed t-test.

\*\*Significant at  $p < 0.05$ , two-tailed t-test.

\*Significant at  $p < 0.10$ , two-tailed t-test.

Compared to Medicaid recipients between the ages of 3 and 13, both younger and older Medicaid recipients are significantly more likely to have inpatient use within the month, given that they had outpatient use. The likelihood of using the hospital is especially high for women between the ages of 14 and 30, which relates to childbearing.

The family size variables also conform to expectations. Compared to families of two, which typically contain a mother and one child, families with three or more members are less likely to use either ambulatory or inpatient care, and when they do use ambulatory care, they use significantly less of it.

With respect to duration of Medicaid and PPMHC enrollment, Table 5.11 shows that the probability of accessing any care increases with the length of Medicaid enrollment. However, the amount of care is not affected by tenure on Medicaid and the conditional probability of being hospitalized decreases with number of months on Medicaid. Contrary to expectations, the number of months that an individual had been in the plan had no significant effect on the likelihood of either inpatient or outpatient use, although we had hypothesized that prepaid plan enrollees might experience difficulties in learning how to access health care through the prepaid plan. However, the amount of health care use declined with increasing numbers of months on the plan. This latter result may reflect a selection effect, since it appears that the heaviest users quit the plan. Thus, the only members who remained in the plan for many months would be the patients with smaller demands for care.

As the means presented in Table 5.7 indicated, the major differences among the plan groups occur in outpatient care. Relative to the random-assignment FFS group, both the self-selected and random-assignment enrolled PPMHC group had a significantly lower probability of having a visit in any month. People who were assigned to the PPMHC but switched out of the plan also had a lower probability of having an FFS visit than the random-assignment FFS enrollees, but this difference was not statistically significant. However the switchers had a significantly higher level of use, if they did have an outpatient visit. In contrast, individuals randomly assigned to the PPMHC who never enrolled had a significantly higher probability of having any contact with the medical system in a month than did the reference group of random-assignment FFS individuals.

Although there were large age effects on the level of outpatient use, there were few significant plan effects. Thus, most of the difference in outpatient use results from differences in the probability of having

any visit during the month. Clearly, those who never enrolled in the plan were higher users of outpatient care. However, although they had more visits, the non-enrollees did not have more costly visits.

There were few significant differences among the plans in the probability of being hospitalized, conditional on having an outpatient visit. We also did not find any significant differences among the plans in the level of hospital resources used by inpatients, although hospital costs varied significantly by age of patient. Therefore, we used average hospital use by age to estimate the level of resource use by hospitalized patients.

Table 5.12 presents the model of health care use by assigned plan. The randomized PPMHC group did not differ significantly in any of the components of use from the randomized FFS plan. These results confirm that, overall, the PPMHC had no significant impact in reducing any of the components of use of medical care.

After controlling for age, sex, and family composition differences, the self-selected PPMHC group did not differ from the randomly assigned FFS group on the probability of using medical care. They had a significantly higher level of use when they did use care, perhaps indicating a greater level of illness or better access when they were treated.

The randomized assignment of Medicaid-eligibles in this study provided a unique opportunity to determine whether any differential in medical use by PPMHC and FFS Medicaid participants resulted from the technical efficiency of the PPMHC or merely from the PPMHC's selection of patients requiring less medical care. Using the randomized design, we have shown that during the time they were enrolled in the PPMHC, Medicaid patients used significantly less medical care than the average Medicaid participant, but that this difference was attributable to selection effects. While they were in the PPMHC, both self-selected and random-assignment groups used 30 percent fewer services than the average self-selected Medicaid eligible using FFS care. However, our evidence also demonstrates that individuals who either dropped out of the PPMHC or who were assigned to get care there, but never enrolled, had significantly greater use than either those who remained in the PPMHC or the average Medicaid-eligible.

For non-Medicaid populations, PPMHC plans reduce health care use by improving access to ambulatory care while strictly controlling inpatient hospital use. PPMHC plans serving predominantly AFDC Medicaid populations have fewer opportunities to reduce hospital use because pregnancy accounts for the majority of hospitalizations. We

**Table 5.12**  
**Monthly Health Care Use by New York Medicaid Enrollees by Assignment to FFS or Prepaid Plan**

Variable	Probability of Use (LOGIT)		Probability of Inpatient Use If Any Use (LOGIT)		Log Monthly Amb. Expense If Outpatient Use (OLS)		Average Monthly Expense If Inpatient Use (OLS)	
	$\beta$	S.E.	$\beta$	S.E.	$\beta$	S.E.	Category	Expense
INTERCEPT	-0.431***	0.182	-3.514***	0.364**	4.267***	0.098	Child <6 (N=105)	\$1,801
SS_FFS	-0.072	0.064	-0.132	0.142	-0.025	0.035		
SS_HMO	-0.017	0.087	0.1993	0.190	0.091**	0.046	Child 6-13 (N=81)	\$2,102
A00_02	0.819***	0.066	0.813***	0.200	0.033	0.034	Female 14-30 (N=254)	\$2,377
A03_05	0.431***	0.052	-0.001	0.231	-0.044*	0.034		
F14_17	0.014	0.068	0.951***	0.245	0.041***	0.041	(N=109)	
F18_30	0.402***	0.049	1.428***	0.164	0.387***	0.029		
F31_44	0.646***	0.050	0.807***	0.183	0.554***	0.029	Other adult (N=77)	\$3,449
POVER44	0.738***	0.104	0.576***	0.309	0.742***	0.062		
M14_21	-0.482***	0.066	0.799***	0.255	0.097***	0.041		
MOVER21	0.169	0.121	0.902***	0.326	0.621***	0.081	Female 31-44	\$3,233
FAMSIZE3	-0.137**	0.068	-0.187	0.151	-0.156***	0.037		
FAMSIZE4	-0.169***	0.070	-0.159	0.158	-0.203***	0.039		
FAMSIZE5	-0.383***	0.076	-0.001	0.169	-0.199***	0.042		
ELIG_PRE	0.044***	0.014	-0.071***	0.027	-0.001	0.008		
HMO_MOS	-0.049***	0.003	0.006	0.014	-0.004	0.003		
N	52211		25997		25371		626	
R <sup>2</sup>					0.081			

NOTES: A variance components correction was applied to the first three equations of the four-part model to adjust for possible intracluster correlation in utilization patterns within families and across time for individuals. Newborns and non-English-speaking Medicaid recipients were deleted from the sample.

\*\*\*Significant at  $p < 0.01$ , two-tailed t-test.

\*\*Significant at  $p < 0.05$ , two-tailed t-test.

\*Significant at  $p < 0.10$ , two-tailed t-test.

found that hospitalization rates did not differ significantly between PPMHC and FFS groups, but outpatient use rates were significantly lower in the PPMHC. In interpreting the lower probability of having an outpatient visit, it is worthwhile to note that FFS Medicaid patients had a 50 percent probability of visiting the doctor in every month. The data show an average of nine visits a year by FFS Medicaid enrollees.

The mean expenditure levels of persons who quit the PPMHC or who never enrolled, despite being assigned, suggest that much of the reduced use within the PPMHC results from selection of good risks. The comparisons of average levels of health care used by the assigned FFS and PPMHC groups control for all differences in populations, since these two groups were chosen from the entire Medicaid population and randomly assigned to either remain in FFS or enter the PPMHC. This comparison confirms that all the lower use of PPMHC participants can be accounted for by selection effects. The comparison of simple means even suggests that after accounting for the use of those who dropped out of the plan, or never enrolled, costs to the state actually rose because the state paid capitations based on the average user for lower than average users. Thus, we conclude that the PPMHC had no effect on total use of medical services; all the apparent reduction is attributable to selection of better risks.

The PPMHC we studied had little impact on overall levels of medical use because it enrolled such a small share of the Medicaid-eligibles randomly assigned to the prepaid plan. Despite the minimal effect on average use levels, the PPMHC can adversely affect state and federal Medicaid expenditures if it enrolls only good risks. The state paid the PPMHC a capitation rate that was based on the medical costs incurred by FFS participants with average health care needs. As we saw, both the PPMHC disenrollees and those who never enrolled although they were assigned to the plan had higher than average medical expenditures. Thus, the enrollees for whom the plan received capitation payments had lower than average needs.

To quantify the effect of the PPMHC on the state Medicaid budget, we calculated the state outlays for each of our assigned groups. For PPMHC enrollees, any FFS use while in the plan is added to the capitation amount. For FFS users, the state outlay is equivalent to total expenditures. As Table 5.13 shows, monthly Medicaid program costs

for the two PPMHC groups are equivalent, \$99, and actually higher than those of the FFS groups, \$86–\$91.<sup>1</sup>

The plan, on the other hand, did quite well, collecting on average slightly over \$90 and spending an average of \$59, a difference of \$32 (Table 5.14). We also show these comparisons by age group. Profits are highest for children under age 1 and for adults over age 21.

**Table 5.13**  
**Medicaid Program Costs by Assigned Group**  
(standard errors)

	Fee for Service		PPMHC		t-stat.
	Self-Selected	Random	Self-Selected	Random	
Average monthly costs	\$86 (3)	\$91 (3)	\$79 (3)	\$94 (3)	
Contrasts	X	X			NS
			X	X	NS
			X		3.26
	X			X	2.86
		X	X		2.10
		X		X	1.85

**Table 5.14**  
**Comparison of Monthly PPMHC Capitation Rates with**  
**Actual PPMHC Expenditures**

	Capitation	Actual PPMHC Expenditures <sup>a</sup>	Differences
All PPMHC enrollees	\$90	\$59	\$32
Children age 0–1 year <sup>b</sup>	273	93	179
Females age 1–14 years	61	47	14
Females age 15–20 years	95	65	30
Males age 1–20 years	67	45	22
Adults age 21–64 years	146	87	59

<sup>a</sup>Excludes FFS use, which averages \$0.94 per month. Only a portion of this \$0.94 is actually billed back to the plan.

<sup>b</sup>Children less than three months old are deleted from our sample. Their costs are reflected in the plan's capitation rate but not in the actual HMO expenditures determined from our sample.

<sup>1</sup>The 1986 capitation rate cited here is lower than that cited for 1985, because the 1985 rate reflected capitations for all Medicaid-eligibles, whereas the 1986 rate is an average of capitations for persons in the analysis sample and therefore excludes infants in the first 3 months of life. These newborns have a very high capitation.

We thus conclude that the voluntary PPMHC studied here led to higher levels of state expenditures. A randomized design allowed us to focus on the selection effects and to distinguish the lower use of those who entered the PPMHC from the higher use of those who escaped enrollment. It is notable that, even controlling for observable factors such as age, sex, and tenure on Medicaid, the PPMHC participants were lower users. These results highlight the differences between voluntary and mandatory enrollment PPMHC plans for Medicaid recipients. Mandatory enrollment plans have reduced the use of medical services. The voluntary Medicaid PPMHC studied here appeared to do so but, in fact, resulted in higher state expenditures for the Medicaid population covered.

Next we focus on dental utilization, one component of the total expenditures studied here. Good coverage of dental service by New York Medicaid provides an excellent opportunity to study and contrast use patterns between PPMHC enrollees and those remaining in fee-for-service Medicaid.

## DENTAL RESULTS

Within the non-Medicaid population, this demand for dental services differs from traditional demand for medical care. In part, this difference arises because most health insurance policies do not cover dental care. (Dental insurance is less common and frequently less generous where available than regular health insurance.) Within the New York Medicaid program, we have the opportunity to compare dental use patterns between fee-for-service and PPMHC users and to observe whether these patterns are similar to use patterns for traditional medical services or differ distinctly.

Because dental care has a large routine preventive component with annual care standards, the data between FFS and PPMHC users were aggregated to the annual level to make the comparisons. Results reported here focus only on the populations that were observed for at least 12 months. However, we tested monthly patterns on all individuals and the findings were consistent with work reported here.

Similar to the analysis of medical use, dental use was divided into parts. The likelihood of use is first examined and then the level of use for users. Because inpatient dental use is too small a part of the total to obtain stable estimates, the multivariate analysis focuses only on a two-part model: (1) the probability of any use; and (2) the (natural logarithm) amount of expenditures for users. Before discussing the

multivariate models, simple mean utilization rates and visit rates are presented.

### Average Annual Use of Dental Services

Table 5.15 presents the proportion of persons using any dental care during one year of eligibility by plan status. FFS groups have much higher proportions of eligibles accessing dental care than do PPMHC eligibles. Fifty-five percent of the self-selected FFS enrollees had at least one dental visit, and the group averaged 1.6 visits per eligible; for the RA-FFS group these figures were insignificantly different: 53 percent used with an average visit level of 1.3. In contrast, 39 percent of the self-selected and 33 percent of the random-PPMHC eligibles used dental care. Although these PPMHC levels of access are higher than those of Medicaid recipients in general, they are significantly lower than those of the FFS study groups from the same area. The RA-PPMHC eligibles average 0.9 visits per year, which is significantly fewer than the FFS-eligibles, while the SS-PPMHC enrollees average 1.2 visits. Non-enrollees (the persons assigned to RA-PPMHC who failed to enroll in the PPMHC) were indistinguishable from FFS groups. Over 44 percent of those who switched out of the PPMHC used dental care over the course of a year. This rate is between that of the PPMHC and FFS groups and is significantly lower than that of FFS enrollees. Thus, the PPMHC enrollees used significantly fewer dental visits than FFS enrollees, with randomly assigned PPMHC-eligibles having the lowest percentage accessing and the fewest average visits per enrollee.

A possible explanation of the low level of use by PPMHC-eligibles may be related to their initial problems in understanding how to use the PPMHC. This learning process may be the cause of lower use

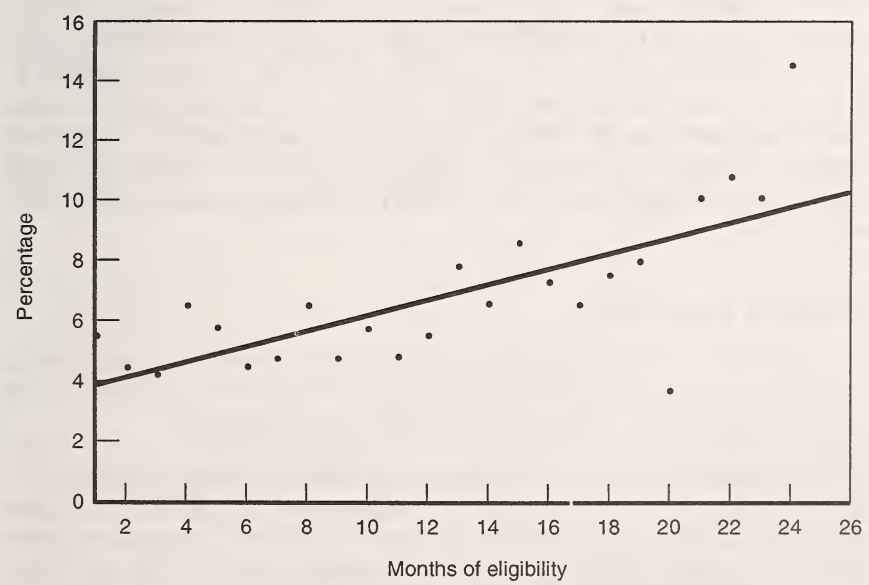
Table 5.15

#### Utilization of Dental Care and Annual Visit by Plan Type

Plan	Total	SS-FFS	RA-FFS	SS-PPMHC	RA-PPMHC	PPMHC Not Enrolled	PPMHC Switched to FFS
No. of users	1827	521	500	178	40	420	148
No. of enrollees	3655	954	984	455	120	810	332
Use rate	50%	55%	53%	39%	33%	52%	45%
Average visits	—	1.6	1.3	1.2	0.9	1.5	1.1

rates initially; however, over a longer period of time, their rates should increase to the point where they would then be comparable to FFS enrollees. The self-selected PPMHC group had been enrolled in the PPMHC before the start of the evaluation and therefore averaged more months of eligibility than the random-PPMHC group. The SS-PPMHC group use rates could reflect their greater familiarity with the system. To test this theory, the probability of use by PPMHC enrollees eligible to use dental care in a given month was plotted by the number of months enrolled in the PPMHC (Figure 5.2). The graph shows that the probability of having a visit in any month ranges from 4.3 percent to 5.5 percent in the first three months of eligibility, and rises to 10.0 percent to 13.8 percent for persons with 22 to 24 months of eligibility. This analysis suggests that, for the PPMHC enrollees, there is a lag in use of dental visits related to learning how to use the PPMHC system.

Table 5.16 compares annual dental expenditures by plan status. When the annual expenditures per user of dental service were examined, the average SS-PPMHC patient cost the plan \$200, which is significantly higher than for any of the FFS groups. This may have



**Figure 5.2—Percentage Accessing Dental Care During a Month by Months of Eligibility**

**Table 5.16**  
**Annual Expenditures for Dental Care**

Plan	SS-FFS	RA-FFS	SS-PPMHC	RA-PPMHC	PPMHC Not Enrolled	PPMHC Switched Out
Mean expenditures per user	\$149	\$142	\$200	165	157	150
(standard deviation)	(170)	(149)	(195)	(115)	(192)	(132)
Mean expenditures per enrollee	82	75	78	55	81	67
(standard deviation)	(146)	(130)	(156)	(102)	(159)	(115)

resulted because the dental department received approximately \$65 per visit from the PPMHC, which was relatively high compared to the low fees paid by Medicaid to community providers. However, when average expenditures per enrollee were examined rather than per user of services, the situation is different. Because a much smaller proportion of plan enrollees used dental care, the average cost per patient was only \$55 for the RA-PPMHC group and \$78 per enrollee for the SS-PPMHC group. By comparison the SS-FFS expenditure averaged \$82 per month, significantly more than the RA-PPMHC group. As the PPMHC matures and average tenure in the plan increases, these differences in the probability of use may continue to drop and the higher cost per PPMHC user may become important. Use and expenditures by the random PPMHC group may be related to learning how to use dental care in the PPMHC, rather than to a lower need for services.

### Modeling Dental Use

To control for individual characteristics such as age, sex, and family size that are known to influence the probability of using dental care and the level of use, multivariate models were developed.

The first model estimates the annual probability of using dental care (see Table 5.17). Plan status clearly affects this probability on an annual basis. Both self-selected and random-PPMHC enrollees were significantly less likely to use dental care than random-FFS enrollees. There was no significant difference between the other FFS enrollees and the RA-FFS reference group.

Table 5.17

## Models Estimating Probability of Dental Use and Expenditures

Variable	Probability of Use (LOGIT)		Annual Expenditures Conditional On Use (LOGIT)		Annual Expenditures Not Conditional on Use	
	$\beta$	S.E.	$\beta$	S.E.	$\beta$	S.E.
INTERCEPT	0.615**	0.122	4.311***	0.075	2.795***	0.135
SS_FFS	0.119	0.095	0.014	0.058	0.119	0.105
RA_FFS (reference)						
SS_PPMHC	-0.466***	0.121	0.572***	0.082	-0.218*	0.132
RA_PPMHC	-0.869***	0.209	0.378**	0.154	-0.739***	0.223
SWITCHED	-0.039	0.688	-0.190	0.062	-0.033	0.109
NOENROLL	-0.202*	0.134	0.188**	0.088	-0.111	0.147
A00_02	-4.189***	0.510	0.742	0.470	-2.545***	0.189
A03_05	-1.097***	0.117	-0.417***	0.084	-1.279***	0.128
A06_13 (reference)						
F14_17	-0.397***	0.141	0.307***	0.091	-0.251	0.160
F18_30	-0.362***	0.108	0.545***	0.067	-0.051	0.122
F31_44	-0.368***	0.107	0.694***	0.066	-0.010	0.121
FOVER44	-0.657***	0.181	0.749**	0.121	-0.337	0.205
M14_21	-0.504***	0.131	0.381***	0.084	-0.327**	0.148
MOVER21	-0.539**	0.223	0.553***	0.149	-0.312	0.253
FAMSIZ1-2 (reference)						
FAMSIZE3	-0.003	0.111	-0.132*	0.069	-0.068	0.122
FAMSIZE4	-0.024	0.113	-0.046	0.071	-0.048	0.124
FAMSIZE5	-0.291**	0.117	-0.095	0.75	-0.363***	0.128
N	3,655		1,827		3,655	
R <sup>2</sup>			0.138		0.079	

\*\*\*p  $\leq$  0.01.\*\*p  $\leq$  0.05.\*p  $\leq$  0.10.

Age influences the probability of using dental care in expected ways. Children younger than six years of age have a lower probability of using dental care than do children ages 6 to 13 (the reference category for the regression). People over 13 years of age, be they males or females, also have progressively less likelihood of visiting a dentist than the reference age group. For children age 6–13 years, the highest users, schools may exert pressure to seek dental care, or parents

may have more interest in preserving the children's recently acquired permanent teeth. As the children reach the teenage years, although the need to use dental care may be greater, parental and school influences may wane, and thus the probability of use is also likely to decline. Adults tend to use dental care less frequently than children, with males being less inclined than females to seek care.

Family size also influences the probability of seeking care. Persons in families of five or more are significantly less likely to seek dental care than those in families with two persons. Davies et al. (1987) also found that family size had a negative effect on utilization. It is probable that large families, particularly those with low income, have difficulty with the logistics of visiting the dentist.

Table 5.17 also shows the factors that relate to the level of (the natural logarithm of) annual expenditures for users of dental care. The results show that although the self-selected FFS group and those who either did not enroll or switched out of the PPMHC are not significantly different from random FFS-eligibles in their expenditures, both PPMHC groups have significantly higher expenditures.

The model's estimates of the influence of age/sex groups are consistent with our expectations. Children under age six have lower annual costs than school-age children. The difference is statistically significant for children aged three to five. Females and older people who used dental care have significantly higher annual expenditures than do school-age children. Family size, however, does not have a clear relationship to annual expenditures, with families with three members having significantly lower expenditures than families of with two members; on the other hand, larger families do not have significantly different expenditures.

The third model presented in Table 5.17 combines the probability of using and the level of expenditures by examining expenditures not conditional on use. Self-selected PPMHC enrollees have marginally lower expenditures than random FFS enrollees. However, the PPMHC random group enrollees have significantly lower expenditures than the reference group. These findings re-enforce the influence of lack of access, for whatever reason, as a determining factor in lower expenditures for PPMHC random enrollees.

We have seen that age is important in predicting the probability of use and expenditures, whereas family size is important in predicting use but not expenditures. Older persons use less but have higher expenditures when they receive care. The combined effects examined in this model produce significantly lower expenditures for the two

youngest age groups and for males between the ages of 14 and 21 but not for the other age/sex groups. It is interesting that adolescent males, who have higher expenditures than the reference group when they use care, have such a low probability of use that their expenditures per enrollee are significantly lower. Unlike the youngest age groups with lower needs for dental care, adolescent males have a relatively high probability of need for dental care but are not receiving treatment. With regard to family size, members of large families have significantly lower expenditures per enrollee than do members of small families. This result is consistent with the probability of use model.

Thus, we see that dental care-seeking patterns have some similarities with patterns of medical care utilization. For both medical and dental services, the PPMHC reduces use relative to FFS. The reduction is all in the probability of using care. For those who get into the system, the amount of care is the same or greater than in fee-for-service.

On the medical side, lower PPMHC use was the result of selection—larger users either did not enroll in the PPMHC or disenrolled, leaving mostly low use Medicaid recipients in the PPMHC. The evidence of selection was not as strong for dental services. Those who chose not to enroll looked like the average fee-for-service dental user and switchers fell somewhere in between the typical fee-for-service and the PPMHC use patterns. Lower dental use in the PPMHC may have been the result of initial access difficulties as the probability of dental use increased with plan tenure.

In the next section we present our findings in Florida. The plan and the results in the Florida PPMHC are quite distinct from those observed in New York.

## 6. FINDINGS IN FLORIDA

### INTRODUCTION

In this section, we present longitudinal findings from the experiment in Florida. Florida's PPMHC is part of a major university teaching hospital that serves both large Medicaid and indigent populations. PPMHC marketing efforts were successful, as was study enrollment. We noted in Section 4 that the evaluation achieved its enrollment targets with 1,000 Medicaid-eligibles in each of the four evaluation groups, RA-FFS, RA-PPMHC, SS-FFS, and SS-PPMHC. Further, the two random-assignment groups were comparable on all measured variables.

The self-selected plan members differed in several ways from their FFS counterparts. Demographically, they were younger, with an average age of 13.7 years, compared to 14.6 years for the FFS group; but they came from larger families, 4.1 individuals compared to 3.7. Whereas the PPMHC members were more likely to report that they had a regular physician, they had fewer outpatient visits in the previous year. Hospital admission rates were similar between the two groups. The PPMHC enrollees also reported lower health status and more chronic conditions than the FFS groups. This suggests that the plan may have been differentially attractive to those with higher health needs. The plan's early marketing strategy focused on hospital outpatient clinics, so this adverse selection was not surprising and may, in fact, have dissipated when the plan revised its marketing strategies.

The section begins with a description of the plan. This is followed by a discussion of Florida's capitation rates and expected use. Results from the experimental component of the evaluation are presented next. As in New York, our analyses looked to determine (1) whether the PPMHC was able to reduce the use of medical services, (2) whether any reduction was attributable to less inpatient or fewer outpatient services, and (3) if the state should save money as a result of the introduction of the PPMHC. Finally, we conclude with some more detailed analysis of children's use of services from the utilization diaries.<sup>1</sup>

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<sup>1</sup>Children constituted the majority of our sample and did not show differentially low use in the first six months in the plan (as we found in the adult sample), so we conducted additional analysis on this group with the utilization diaries.

## DESCRIPTION OF THE PPMHC

The PPMHC is sponsored by a county agency created to operate, maintain, and govern the county-owned health facilities. A large (1,250-bed) university teaching hospital charged with caring for both Medicaid recipients and the medically indigent in this county is the central core of the county health facilities network. In addition, the county owns the PPMHC and manages two primary care clinics. The PPMHC sponsors looked to this demonstration as a means to control costs for the Medicaid population with hopes of later expanding to their indigent caseload. There were approximately 144,000 Medicaid-eligibles in the plan's service area. In addition, the plan expected to serve and enroll the medically indigent. PPMHC enrollment at the time of the study was around 7,000 Medicaid recipients.

The plan was originally developed as a staff-model HMO but intended to expand by contracting with a network of primary care clinics in the county. The clinics were to assume responsibility for all primary care for plan members in their respective areas and would in turn receive a part of the capitation that the PPMHC received from the state. Sampling for the evaluation was limited to the main clinic, a staff-model HMO.

All of the primary care physicians in the plan were salaried and all specialists were paid on a fee-for-service basis. PPMHC physicians in the main clinic did not treat non-PPMHC patients. Final arrangements with the network of primary care clinics had not been negotiated, though an interim arrangement provided for both capitated and fee-for-service patients. All clinic physicians were salaried though payments from the PPMHC to the clinics were planned as capitations. Projected PPMHC enrollment with the full complement of 10 clinics was 20,000 Medicaid recipients.

The state was considered to have a competitive HMO market for its non-Medicaid population. Although Medicaid was a more recent entrant into the HMO market, the plan competed directly with three other HMOs in its immediate service area and indicated that concern over loss of Medicaid patients was an issue behind the development of the PPMHC.

The plan was a state licensed HMO but was not federally qualified and had no immediate plans to seek federal qualification.

As a staff-model HMO, the plan did not use financial incentives to control use. It did monitor the following services to assess the appropriateness of plan use patterns: inpatient stays, outpatient visits, emergency room visits, birth rates, and premature births. Individual

physician use profiles were not available, and sanctions for inappropriate use were not considered.

## **DATA AND METHODS**

Five sources of data were used for the analyses presented in this section: (1) the monthly Medicaid eligibility files, (2) the monthly Medicaid claims files, (3) the PPMHC utilization files, (4) our baseline enrollment questionnaire, and (5) the utilization diaries.

### **Establishing Comparability Between PPMHC and Medicaid Claims Data**

The Florida PPMHC provided services in its main clinic site and purchased referral services from other clinics and inpatient services from the hospital. Prices were available for referral services and we imputed values to clinic visits. Pharmacy data were not always available for plan members, so we eliminated pharmacy charges from both samples. We also had difficulty identifying all data on newborns, so infants age 1–3 months were dropped from many of our analyses.

### **Estimation Methods**

As in New York, we adapted the four-equation model of the demand for medical care developed by Duan et al. (1983). The first two equations are logit models for the probability of any use and the conditional probability of inpatient use given positive use. The third equation, estimated with ordinary least squares regression, predicts the (natural logarithm of) monthly expenditures, conditional on some outpatient use but no hospitalization. The final equation is an analysis of variance model that predicts inpatient expenditures as a function of age and gender. As in New York, we used split sample techniques to test the fit of our models. Again, we found that the models fit both the initial and the test samples well.

## **FLORIDA CAPITATION RATES AND EXPECTED USE**

Medicaid capitation rates were established entirely by the state Medicaid agency. Separate rates were set for each county and rates were program specific, that is, rates differed for AFDC Medicaid, SSI Medicaid, the dually entitled, etc. Services not covered by the plan were eliminated from the calculations. Rates were set at 95 percent of historic fee-for-service expenditures and inflated forward to the appropriate year.

Below, we show the variation in mean monthly FFS expenditures in Florida for a set of age and gender groups (see Table 6.1). These vary between \$18 and \$121, almost a sevenfold difference. With such large differences from one group to another, the state may wish to consider age and gender rate groups. This revision is particularly important if the PPMHC attracts a different age-gender distribution than is found in the Medicaid FFS population. In particular, if the plan is systematically more or less appealing to high expenditure groups, then the plan unfairly loses or gains with a single payment rate. Columns 2 and 3 show the sample distributions for our study. Somewhat unexpectedly, these distributions are quite similar. But we do not know how these may have changed through time. Rate-setting groups that adjust for age and gender would provide both the state and the plan with protection against unintended potential gains or losses.

## DESCRIPTIVE RESULTS

We began our analysis in Florida by looking at raw expenditure data. Table 6.2 displays unadjusted means by system of care, in total, and for the four assigned study groups, self-selected FFS, random-assignment FFS, random-assignment PPMHC, and self-selected PPMHC. We observed clear differences in expenditures between the two systems of care; FFS expenditures averaged \$42 and PPMHC expenditures averaged \$30 per month for the full sample.<sup>2</sup>

**Table 6.1**

### Florida Mean Monthly FFS Expenditures by Age and Gender

Age/Gender	Mean Expenditures	Percent in FFS Medicaid	Percent in PPMHC
All groups	\$47	100	100
Age 0–2 years	\$85	1.53	14.3
Age 3–5 years	23	17.1	20.1
Age 6–13 years	18	28.9	30.0
Males over 13 years	30	5.8	4.3
Females 14–17 years	38	4.9	3.9
Females 18–30 years	76	16.8	18.0
Females 31–44 years	66	9.0	8.1
Females over 44 years	121	2.2	1.4

<sup>2</sup>Our data show a clear pattern that use per enrollee decreases through time. Consequently, by following the same cohort of individuals, mean expenditures in the post-enrollment data drop below pre-enrollment levels and no longer represent the “average” Medicaid month.

**Table 6.2**  
**Components of (Deflated) Expenditures: Florida Postselection Data**  
**(uncorrected standard errors)**

	All Groups		Assigned Self-Selected FFS		Assigned Random FFS		Assigned Random Plan		Assigned Self-Selected Plan	
	FFS	Plan	FFS	Plan	FFS	Plan	FFS	Plan	FFS	Plan
Sample months	24,409	17,565	8,728	510	9,062	392	5,011	8,009	1,608	8,654
Mean monthly expenditure	\$42 (3.8)	\$30 (2.6)	\$44 (4.0)	\$29 (10.9)	\$46 (5.2)	\$29 (8.5)	\$39 (4.8)	\$30 (4.3)	\$23 (3.6)	\$30 (3.3)
Probability of any use	.22 (.003)	.16 (.003)	.22 (.004)	.17 (.017)	.22 (.004)	.22 (.021)	.25 (.006)	.14 (.004)	.18 (.010)	.18 (.004)
Probability of hospitalization	.009 (.0006)	.008 (.0007)	.010 (.0011)	.004 (.0028)	.009 (.0010)	.008 (.0044)	.009 (.0013)	.008 (.0010)	.006 (.0020)	.007 (.0009)
Conditional on some use										
Mean outpatient expenditures	\$77 (1.5)	\$78 (2.2)	\$81 (2.8)	\$111 (33.0)	\$76 (2.4)	\$76 (8.4)	\$73 (3.0)	\$77 (3.0)	\$79 (7.4)	\$77 (2.7)
Mean expenditures for hospitalized patients	\$2,737 (209)	\$2,416 (265)	\$2,516 (276)	\$2,648 <sup>a</sup> (2070)	\$3,330 (434)	\$1,675 <sup>a</sup> (569)	\$2,359 <sup>a</sup> (402)	\$2,460 (432)	\$1,536 <sup>a</sup> (227)	\$2,399 (338)

<sup>a</sup>Fewer than 50 observations.

Because participation in our study was voluntary, some individuals assigned to FFS groups inevitably enrolled in the PPMHC, whereas persons assigned to one of the plan groups either did not enroll or disenrolled, returning to FFS care. Consequently, each sampled group includes services delivered in both systems of care. Some caution is warranted in reviewing these data. Sample sizes for the second system of care, that is, not the assigned system, can be quite small. We have reported sample months; however, one individual can account for up to 12 months of data, so the number of independent observations is quite small in some cases. The hospital results, in particular, may be quite unstable. We note that expenditures in the prepaid plan were similar in the four assigned groups, but FFS expenditures did not differ in three of the four groups. The exception was FFS care delivered to self-selected plan enrollees, which was markedly lower.

To understand what contributed to these differences, we looked at the probability of using care and the amounts of care used for hospitalized patients and for those using only outpatient services. For the full sample, our results indicate that the overall differences are attributable to differences in the probability of using care, which is much lower in the PPMHC. Our other three measures did not differ between the two systems of care: (1) the probability of hospitalization, (2) mean expenditures for those with inpatient use, and (3) mean expenditures for those with only outpatient use.

When we examined the assigned groups separately, results differed somewhat for the smaller, second system of care groups. For the two assigned FFS groups, results are very similar to the full sample FFS results. However, plan figures, which are based on small samples for the assigned FFS groups, differ. Similarly, for the two assigned plan groups, the plan figures are fairly comparable to the overall results, whereas the FFS numbers differ.

Multivariate models, presented below, let us control for correlates of use and correct for the correlation in the multiple observations from the same individual over time and from members of the same family. Thus they provide corrected standard errors for statistical testing.

## MULTIVARIATE MODELS

As in New York, we estimate four separate equations, first on individuals in their assigned group, followed by another set of estimates using actual system of care in addition to assigned group. Variable definitions for both dependent and independent variables in all models in this section are provided in Table 6.3.

**Table 6.3**  
**Definition Variables**

Variable	Definition
<b>Dependent variables</b>	
DUMEXP	Any medical care use in a month
DUMINPAT	Any inpatient use in a month
TOTEXP	Total monthly expenditures
TOTOUTP	Total monthly outpatient expenditures
TOTINP	Total monthly inpatient expenditures
<b>Explanatory variables</b>	
SS_FFS_A	Assigned to self-selected FFS
SS_HMO_A	Assigned to self-selected HMO
RA_FFS_A	Assigned to randomized FFS (referent category)
RA_HMO_A	Assigned to randomized HMO
SS_FFS	Enrolled in self-selected FFS
SS_HMO	Enrolled in self-selected HMO
RA_FFS	Enrolled in randomized FFS (referent category)
RA_HMO	Enrolled in randomized HMO
NOENROLL	Never joined assigned HMO and used FFS instead
SWITCHED	Switched out of the HMO and used FFS
A00_02	Age less than 2 years old
A03_05	Child 3–5 years old
A06_13	Child 6–13 years old (referent category)
F14_17	Female 14–17 years old
F18_30	Female 18–30 years old
F31_44	Female 31–44 years old
FOVER44	Female over 44 years old
M14_21	Male 14–21 years old
MOVER21	Male over 21
FAMSIZE1	Family of size 1 or 2 (referent category)
FAMSIZE3	Family of size 3
FAMSIZE4	Family of size 4
FAMSIZE5	Family of size 5 or more
NEWBORN	Infant first 4 months of life
ELIG_PRE	Months of Medicaid eligibility in prior year
HMO_MOS	Months of HMO enrollment before current month, starting from the prior year period, for HMO members only
Excellent health	Self-reported health status is excellent
Very good health	Self-reported health status is very good
Excellent/very good health	Self-reported health status is excellent or very good
Fair health	Self-reported health status is fair
Poor health	Self-reported health status is poor
Not black	Ethnic status is not reported as black
Education 0–9 years	Highest level of education of head of household is 0–9 years
Education 12 + years	Highest level of education of head of household is 12 or more years
1 chronic condition	Has 1 reported chronic condition
2 chronic conditions	Has 2 reported chronic conditions

Table 6.3—continued

Variable	Definition
3 + chronic conditions	Has 3 or more reported chronic conditions
Prior hospitalization	Was hospitalized last year
Currently seeing physician	Was in treatment at baseline interview
Regular physician	Has a regular doctor
No visits last year	Had no visits during previous year
1 or (1 + visits)	Child 6–13 years old (referent category)
ln (1 + visits)	Natural logarithm of 1 + number of visits last year
Pregnant	Pregnant baseline interview

We use the same four dependent variables used in the New York analysis:

- DUMEXP—whether the enrollee used any medical services in the month.
- DUMINPAT—whether any inpatient use occurred in the month.
- TOTEXP1—total monthly expenditures for individuals with only ambulatory use (in logarithms).
- TOTEXP2—total monthly expenditures for individuals with inpatient expenses (in logarithms).

Expenditures were attributed to the month in which the service was provided. If a hospital stay overlapped more than one month, inpatient expenditures were allocated to each month based on the proportion of the stay occurring in that month.

Additional explanatory variables other than plan status adjust for the known correlates of health care utilization, including age, gender, family size, education of the head of the household, prior time on Medicaid, health status, ethnicity, having a regular doctor, and prior utilization. Age and gender were combined to form seven categorical variables as shown in Table 6.3. The specifications were tested in an early analysis and were found to give the best fit to the data on a randomly chosen half of the data. The specifications were tested for robustness on the remaining half of the data. Family size is typically an important determinant of medical care utilization and is included in our specifications. We use three categorical variables representing (1) families with one, two, or three members, (2) families of four, and (3) families of five or more persons. Our data on race are imprecise, as Florida has a large number of Caribbean immigrants who can be

classified as either black or Hispanic. In our data, these individuals tend to be classified as black. Preliminary analyses suggest that the individuals in our sample who were coded as Hispanics had utilization patterns that were similar to those of whites and Asians, whereas blacks had somewhat different patterns. Because the non-black population is small, we included these groups together in a single non-black category.

We have included both direct measures of health status and measures of prior use of health services. A self-reported health status measure was available on each family member from the enrollment interview. This measure asks respondents to classify their health status as (1) excellent, (2) very good, (3) good, (4) fair, or (5) poor. We created categorical variables for each response. For some of our analyses, we collapsed the first two categories into a single grouping and the last two into another. Our second measure of health status reflects the number of chronic conditions that the respondent reported at the enrollment interview. In the multivariate models, the number of chronic conditions reported for each family member were aggregated into three categorical variables for one, two, and three or more chronic conditions. Prior utilization measures, visits, and hospitalizations in the previous year add to the precision of self-reported health status measures and can be thought to represent the care-seeking component of patient behavior. The last health status measure was an indicator designating women who were pregnant at the time of the enrollment interview.

Two additional measures were used to determine how well an individual was linked into the health care system. These were reporting having a regular doctor and being under the care of a doctor at the time of the enrollment interview.

Variable means by assigned group are shown in Table 6.4. The four subsamples show relatively small differences across most of the variables.

The first set of models grouped patients according to their assigned plan regardless of what system of care they actually used for services. These results are shown in Table 6.5. The reference group is random-assignment FFS, age 6–13 years, family size 1–3, good health, black, with no chronic conditions, and 9–12 years of education for the head of household.

Our models indicate that both the random-assignment and the self-selected plan groups had significantly lower probability of use than

**Table 6.4**  
**Variable Means by Assigned Group**

	RA-FFS	RA-PPMHC	SS-FFS	SS-PPMHC
Age 0–2 years	.11	.10	.11	.09
Age 3–5 years	.18	.18	.18	.18
Males over 13	.09	.08	.05	.07
Females 14–17	.05	.05	.04	.04
Females 18–30	.15	.16	.19	.19
Females 31–44	.08	.08	.08	.08
Females over 44	.02	.01	.02	.02
Eligible–preperiod	11.30	11.40	11.40	11.70
Family size 4	.21	.23	.25	.21
Family size 5	.32	.27	.23	.38
Excellent health	.29	.29	.28	.26
Very good health	.22	.26	.24	.22
Fair health	.16	.11	.12	.16
Poor health	.03	.02	.03	.03
Not black	.16	.15	.17	.07
Education 0–9 years	.24	.22	.18	.16
High school graduate	.31	.34	.45	.40
1 chronic condition	.28	.26	.24	.23
2 chronic conditions	.14	.13	.15	.15
3 chronic conditions	.20	.18	.15	.21
Prior hospitalization	.11	.11	.13	.12
Seeing physician	.15	.15	.18	.13
Regular physician	.43	.45	.53	.65
No visits last year	.18	.22	.17	.17
ln visits	1.28	1.23	1.37	1.24
Pregnant	.02	.02	.02	.02

the random-assignment FFS group. This reduction in use was larger for the self-selected plan group, but this was partially offset by larger outpatient expenditures. No differences were found in either hospital admission rates or hospital expenditures.

Coefficients on the age, family size, and health status measures conformed to expected patterns. Children 6–13 had the lowest probability of use and of hospitalization. The likelihood of use decreased as children went from infancy to ages 6–13, and increased with age thereafter. The probability of hospitalization followed a similar pattern except it decreased again for women beyond child-bearing ages. Outpatient expenditures also generally followed this pattern, although differences across categories were often not statistically significant. As anticipated, the probability of use decreased significantly

**Table 6.5**  
**Florida Assigned Plan Results**

	Probability of Any Use	Probability of Hospi- talization Given Use	(ln) Expenditures Outpatient Only	Expenditures for Hospitalized Patients
Intercept	-1.89***	-4.59***	3.44***	\$ 2,796*
RA-PPMHC	-0.19*	0.03	0.06	
SS-FFS	-0.07	0.11	0.06	
SS-PPMHC	-0.25**	-0.21	0.15**	
Age 0-2 years	0.73***	1.08**	0.06	\$ 1,228
Age 3-5 years	0.35***	0.36	-0.04	\$ -1,293
Males over 13	-0.12	1.11*	0.41***	\$ 2,051
Females 14-17	0.52***	1.10**	0.07	\$ -884
Females 18-30	0.67***	1.97***	0.08	\$ -884
Females 31-44	0.62***	1.65***	0.16**	\$ 343
Females over 44	1.01***	1.45**	0.19	\$ 343
Months eligibility in preperiod	-0.03	—	0.00	—
Family size 4	-0.20**	-0.06	-0.10*	—
Family size 5	-0.25***	0.54**	-0.12*	—
Excellent health	-0.11	—	0.05	—
Very good health	-0.05	—	0.01	—
Excellent/very good health	—	0.37*	—	—
Fair health	0.20**	0.54**	0.17**	—
Poor health	0.57***	0.94***	0.25**	—
Not black	0.54***	-0.34	-0.04	—
Education 0-9 years	-0.10	-0.27	-0.01	—
Education 12+ years	0.04	-0.18	-0.04	—
1 chronic condition	0.01	—	0.04	—
2 chronic conditions	-0.10	—	0.16**	—
3+ chronic conditions	0.14	—	0.16**	—
Prior hospitalization	0.01	0.50**	0.20***	—
Currently seeing physician	0.16*	—	0.10*	—
Regular physician	0.27***	0.36**	-0.16***	—
No visits last year	0.07	0.38	-0.04	—
ln (1+ visits)	0.24***	-0.10	-0.09***	—
Pregnant	0.31*	1.42***	0.11	\$ -509

\*p &lt; .05.

\*\*p &lt; .01.

\*\*\*p &lt; .001.

with family size. Both the probability of use and the level of outpatient expenditures tended to increase as health status worsened and the number of chronic conditions increased. Being pregnant at the

time of the enrollment interview increased the probability of use, as did being under the care of a physician, having a regular doctor, and having more prior visits.

Our second set of models looked at actual system of care each month. To do this we redefined the plan variables, so self-selected PPMHC designated plan enrollees during the months that they were actually enrolled in the PPMHC. We added three new variables to describe actual enrollment patterns: (1) random-assignment PPMHC—never enrolled, (2) switched from PPMHC to FFS, and an interaction term, (3) adults, first six months in PPMHC.

Again, both the random-assignment and self-selected plan groups had significantly lower probability of use (see Table 6.6). The relative reductions have reversed from the last analysis; the random plan reduction is now larger than the reduction in the self-selected plan group. Both groups have somewhat larger mean monthly outpatient expenditures. We also found that plan use during the first six months after enrollment was lower still. The HMO literature suggests that enrollees in many plans experience lower use in the early phases of enrollment while they are learning how to use the system.

Medicaid recipients who switched out of the plan and back into the fee-for-service system had utilization patterns exactly like other FFS users. This suggests that those who disenrolled from the plan did not have higher than average health needs. Similarly, those who were assigned to the PPMHC but never enrolled had average use patterns.

Because plan effects differ across the equations, we have combined the results from the set of equations into overall predictions of mean expenditures for each group. These are shown in Table 6.7. The actual plan use predictions show that the PPMHC is technically efficient—reducing health care use in the months in which people were enrolled in it. The predictions by assigned plan suggest that the plan is operationally efficient as well—reducing health care utilization for a defined population of Medicaid users. Consequently we conclude that this PPMHC should save Florida money.

We tested other model specifications as well. In particular, we were interested in learning whether the PPMHC provided more care to enrollees with greater health problems. To test this, we introduced two new variables, one for adults and one for children, for plan enrollees with one or more chronic conditions. The coefficients on these variables were both positive, but the effects were not large enough to be statistically significant.

**Table 6.6**  
**Florida Current Plan Results**

	Probability of Any Use	Probability of Hospi- talization Given Use	(ln) Expenditures Outpatient Only	Expenditures for Hospitalized Patients
Intercept	-1.91***	-4.63***	3.49*	\$ 2,992*
SS-FFS	-0.04	0.16	0.05	—
SS-PPMHC	-0.25**	-0.20	0.19**	—
RA-PPMHC	-0.40***	0.02	0.15*	—
RA-PPMHC-months 1-6 (adults)	-0.22*	0.24	0.07	
Switched	0.06	-0.37	0.05	
RA-plan-not enrolled	0.15	0.01	-0.07	—
Age 0-2 years	0.74***	1.18***	0.07	\$ 1,029
Age 3-5 years	0.36***	0.46	-0.05	\$ -1,489
Males over 13	-0.14	1.22**	0.41***	\$ 1,855
Females 14-17	0.53***	1.09**	0.07	\$ -1,053
Females 18-30	0.70***	2.04***	0.07	\$ -1,053
Females 31-44	0.67***	1.73***	0.14*	\$176
Females over 44	0.94***	1.47***	0.13	\$176
Months eligibility in preperiod	-0.03	—	0.00	—
Family size 4	-0.20**	-0.10	-0.10*	—
Family size 5	-0.23**	0.56***	-0.10*	—
Excellent health	-0.11	—	0.05	—
Very good health	-0.06	—	0.02	—
Excellent/very good health	—	0.38**	—	—
Fair health	0.22**	0.54**	0.18**	—
Poor health	0.60***	0.78***	0.29**	—
Not black	0.53***	-0.31	-0.02	—
Education 0-9 years	-0.09	-0.26	-0.01	—
High school graduate	0.00	-0.20	-0.02	—
1 chronic condition	0.03	—	0.05	—
2 chronic conditions	0.11	—	0.17**	—
3 chronic conditions	0.15*	—	0.18***	—
Prior hospitalization	0.03	0.46***	0.20***	—
Currently seeing physician	0.19**	—	0.10*	—
Regular physician	0.25***	0.36**	-0.16***	—
No visits last year	0.07	0.35	-0.04	—
ln (1+ visits for 1+ visit last year)	0.24***	-0.12	-0.10***	—
Pregnant	0.35**	1.45***	-0.11	\$ -536

\*p &lt; .05.

\*\*p &lt; .01.

\*\*\*p &lt; .001.

**Table 6.7**  
**Predicted Monthly Health Care Use for Florida**

	Total	SS-FFS	RA-FFS	SS-PPMHC	RA-PPMHC	Never Enrolled	Switched to FFS
By current plan, monthly use (\$)	33	39	41	26	27	34	27
By assigned plan, monthly use (\$)	32	37	36	27	31		

To test whether minorities were treated differently within the plan, we introduced an interaction term for non-blacks in the PPMHC. Somewhat surprisingly, we found that non-blacks had lower probability of use in the PPMHC and that this difference was statistically significant. Thus, the PPMHC actually provided more care to blacks than to non-blacks.

### VALIDATING OUR RESULTS

Prepaid plan and fee-for-service system comparisons often require that we combine data from different data-processing systems. In the end, we would like some assurance that the differences that we observe are real and not an artifact of the data system incomparability. We use data from both the utilization diaries and the enrollment interview for this purpose. The baseline interview asks about use before enrollment, and these data show that both children and adults in the plan had significantly lower use than their FFS counterparts. Diary results, which ask about use during two month periods following the baseline interview, also confirm these differences for children. Adult diaries do not show significant differences between the plan and FFS Medicaid.<sup>3</sup>

Because children constitute the largest part of our sample and the prepaid plan reduced their use of services, we wanted to explore this

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<sup>3</sup>Diary results were less useful than we initially hoped. Because enrollment required a longer time in the field and we had to go to an interview format to secure adequate periodic assessment questionnaire response rates, very few resources were available for diary follow-up. Consequently, our response rates were low. A second problem refers to the diary timeframe. We asked about use during the previous two months but respondents did not complete the questions regarding dates, so we were unable to match the timeframes precisely.

reduction in greater detail. The utilization diaries provided some information on the content and types of care that were not available from the claims data. In particular, they allowed us to distinguish acute care from routine check-ups and provided some detail on visit content. They also allowed us to identify emergency room use that was not distinct in the claims data. We discuss these findings below.

## CHILDREN'S USE OF HEALTH SERVICES

For these analyses, our sample size was considerably smaller so we adopted a more parsimonious specification of our plan variables. Initial tests showed that we could combine the two PPMHC groups as well as the two FFS groups. In the final specification, FFS is the omitted category. Table 6.8 presents the simplest logistic regression model of the determinants of check-up and acute care visits. It shows that children enrolled in the PPMHC have a lower probability of an acute care visit. Although the coefficient on plan enrollment just fails to meet the standard 5 percent test for statistical significance ( $p$ -value = .056), the coefficient is large enough to indicate that plan enrollment triggers a real and important reduction in acute care visits.<sup>4</sup> The predicted rate of acute care visits for plan children was only 14 percent per month, whereas for FFS children it was 23 percent per month (controlling for all other factors in the model). In contrast, on check-up visits, plan members and FFS children were indistinguishable. Three alternative explanations for this finding are: First, the plan may provide better, more complete care at the time of the check-up, so that fewer acute care visits are necessary; second, the plan may reduce unnecessary use among basically healthy children but serve children with serious or frequent health problems at an appropriately higher level; or third, the plan may respond to the incentives inherent in any capitation scheme and underprovide services (for example, by making it difficult to come in for acute care). This third explanation is not supported by the data in Table 6.8, however. If the plan were withholding on services, presumably the effect should also appear in rates of check-up visits, which it does not.

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<sup>4</sup>In fact, the coefficient on plan enrollment for acute visits was negative and significant ( $p$ -value = .020) before we corrected the regression standard errors for covariance between repeated observations from the same child and from the same household. With this covariance correction, the coefficient estimate did not change but the estimated standard error became larger; consequently, the statistical significance just dipped below the 5 percent threshold ( $p$ -value = .056).

Table 6.8

**Check-Up and Acute Care Visits: Logistic Regression Coefficients**  
**(t-statistics shown in parentheses)**

	Had Check-Up Visit	Had Acute Care Visit
Enrolled in PPMHC plan	-0.003 (0.02)	-0.324 (1.91)
Randomly assigned	-0.055 (0.30)	-0.155 (0.85)
Female	-0.110 (0.89)	0.023 (0.18)
White	0.328 (1.66)	0.162 (0.66)
Child's age in years	-0.325** (4.83)	-0.373** (5.19)
Child's age squared	0.015** (3.00)	0.019** (3.74)
Number of allergies listed for child at start of experiment	0.056 (0.40)	0.305* (2.38)
Number of serious health problems listed at start of experiment	1.106* (2.13)	0.757 (1.21)
Number of other health problems listed at start of experiment	0.174 (1.26)	0.449** (3.36)
Diary is from second wave	0.213 (1.07)	-0.541** (2.57)
Diary is from third wave	-0.453 (1.60)	-0.700* (2.22)
Diary describes April–September	0.244 (1.28)	0.625** (3.09)
Intercept	0.161 (0.66)	-0.055 (0.21)

\*.01 < p ≤ .05, 2-tail test.

\*\*p ≤ .01, 2-tail test.

Child age has the expected effect on medical visits. The probability of any type of visit falls at a decreasing rate with age, bottoming out around age ten. Although typically boys are frailer than girls, gender is not a significant predictor of either acute or check-up visits when prior health status and age are controlled for.

Children's prior health problems have different effects on acute care and check-up visits. A child with a major disabling condition (blindness, diabetes, cerebral palsy, mental retardation, cancer, or missing limbs) was significantly more likely than a nondisabled child

to visit for routine care (probability of a check-up = 41 percent), whereas a child with an allergy (eczema, asthma, hay fever, or other skin and respiratory allergies) or "other" (nondisabling) conditions had above average likelihood of an acute visit.

The coefficient on "white" suggests that white children may be more likely than non-whites to have had a recent check-up visit (31 percent of whites compared to 19 percent of non-whites), though this variable is barely significant at the 10 percent level. If this difference is real, it implies that parents of white children may be more assertive than others in seeking regular check-ups for their children.

The final variables we consider are aspects of the survey administration: method of assignment and timing of the diary. Self-selection *per se* (as opposed to self-selection into a specific system, either plan or FFS) does not have a significant effect on use. ("Self-selected" is the complement of "random" in the models.) The season of the year, however, does. This site is Florida, and the seasonality variable works in the opposite direction from in the north; the summer months bring significantly more acute care problems, presumably for ailments associated with exposure to sun and humidity, and with moving between air conditioning and extreme heat.

The coefficients on Wave 2 and Wave 3 show respondents reporting fewer acute care visits in later waves of the survey. This pattern is consistent with the utilization patterns observed in the claims data.

Table 6.8 indicates that the structure or practices of the plan led to fewer acute care visits among enrolled children. Our subsequent analyses examine whether the decline was concentrated among certain groups of children. We could imagine various scenarios that might explain the decline. First, the plan might impose barriers to service that would discourage or delay use by parents lacking experience or resources to demand immediate care for their children. These parents might include recent immigrants, non-English-speakers, or parents with low income or education. We took ethnicity (white/non-white) as a very rough proxy for resources and language. We interacted "white" and "non-white" with "plan enrollment" in the regression model shown in Table 6.9.

White children enrolled in the plan had somewhat, but not significantly more preventive visits than black children enrolled in FFS (the omitted category in the model). Black children in the plan and white children in FFS did not differ in preventive visit use from black children in FFS. There were also no plan differentials in acute care visits.

**Table 6.9**  
**Check-Up and Acute Care Visits, Including Interaction of PPMHC**  
**with Ethnicity: Logistic Regression Coefficients**  
**(t-statistics shown in parentheses)**

	Had Check-Up Visit	Had Acute Care Visit
White and in PPMHC	-0.494 (1.59)	-0.269 (0.71)
Non-white and in PPMHC	-0.065 (0.36)	-0.269 (1.60)
White and in fee-for-service	0.135 (0.52)	0.254 (0.85)
Randomly assigned	-0.058 (0.33)	-0.156 (0.85)
Female	-0.116 (0.94)	0.026 (0.20)
Child's age in years	-0.327** (4.88)	-0.372** (5.18)
Child's age squared	0.015** (3.02)	0.019** (3.73)
Number of allergies listed for child at start of experiment	0.055 (0.39)	0.306** (2.38)
Number of serious health problems listed at start of experiment	1.095* (2.10)	0.763 (1.22)
Number of other health problems listed at start of experiment	0.169 (1.19)	0.452** (3.37)
Diary is from second wave	-0.206 (1.02)	-0.545** (2.59)
Diary is from third wave	-0.443 (1.57)	-0.700* (2.25)
Diary describes April–September	0.240 (1.26)	0.625** (3.08)
Intercept	0.207 (0.85)	-0.055 (0.33)

\*.01 < p ≤ .05, 2-tail test.

\*\*p ≤ .01, 2-tail test.

Second, we compared the probability of a medical visit across relatively healthy children and children with pre-existing health problems, controlling for plan status. We speculated that the plan might succeed in reducing care among children with few needs, but would still experience visits from less healthy children at the same rate as under an FFS system. The results in Table 6.10 support this theory. The decline in acute care visits is concentrated among children with no health problems identified at the start of the experiment; their

Table 6.10

**Check-Up and Acute Care Visits, Including Interaction of PPMHC  
with Health Problems: Logistic Regression Coefficients  
(t-statistics shown in parentheses)**

	Had Check-Up Visit	Had Acute Care Visit
Enrolled in PPMHC plan, had no preexisting health problems	-0.031 (0.18)	-0.435* (2.25)
Enrolled in PPMHC plan, had at least one preexisting health problem	0.008 (0.05)	0.073 (0.55)
Randomly assigned	-0.056 (0.30)	-0.071 (0.39)
Female	-0.109 (0.89)	0.026 (0.20)
White	0.325 (1.63)	0.160 (0.65)
Child's age in years	-0.324** (4.82)	-0.373** (5.20)
Child's age squared	0.015** (3.00)	0.019** (3.71)
Number of allergies listed for child at start of experiment	0.049 (0.24)	0.182 (1.19)
Number of serious health problems listed at start of experiment	1.108* (2.15)	0.873 (1.63)
Number of other health problems listed at start of experiment	0.164 (1.08)	0.321** (2.68)
Diary is from second wave	0.208 (1.05)	-0.588** (2.89)
Diary is from third wave	-0.446 (1.57)	-0.706* (2.25)
Diary describes April-September	0.242 (1.27)	0.606** (2.98)
Intercept	0.168 (0.69)	-0.049 (0.19)

\*.01 < p ≤ .05, 2-tail test.

\*\*p ≤ .01, 2-tail test.

probability of an acute care visit in the two-month period is only 11.5 percent, compared to a visit probability of 16.7 percent for equally healthy children in the FFS system. Children with one or more problems at the outset of the study showed absolutely no drop in visit probabilities. The likelihood of a check-up visit was not affected by plan enrollment for either group.

We tested the hypothesis that physicians might provide more comprehensive care during visits to the plan, using data on the types of

tests provided (urine test, throat cultures, etc.) and some of the questions asked during visits. Tests of the effect of plan status on some of the procedures and advice that could have been given in visits, however, revealed no significant differences between visit content in the plan and the FFS systems (Table 6.11). Although children in the plan were somewhat more likely to have a blood test during a preventive visit ( $p=.10$ ), they were somewhat less likely to receive a throat culture during an acute care visit ( $p=.09$ ).

We next sought to determine if the plan selectively reduced emergency room (ER) visits relative to FFS use. Overall, 2.4 percent of children used the ER for a check-up in a two-month period and 4.8 percent visited for an acute problem. Viewed differently, nearly one-quarter of all acute visits, and 9 percent of all check-up visits, occurred in the ER. We modelled the probability of any visit to the ER, conditional on having had at least one check-up or acute visit, to determine whether, among those who used medical services, enrollees were less likely to use the ER. As Table 6.12 shows, there are no significant differences between plan and FFS enrollees in their ER use. More elaborate models, examining acute and check-up ER visits separately, also failed to reveal any significant determinants of use.

Our results show that the plan reduced acute care visits for children on Medicaid. The deterrent effect of PPMHC membership on acute care visits is not found across the board for all children. On the con-

**Table 6.11**  
**Content of Children's Check-Up and Acute Care Visits**  
**in FFS and PPMHC Plans**

	Event Rate		Probability That Occurrence Rates Are the Same in FFS and PPMHC
	FFS	PPMHC	
Check-up visit			
Child's development discussed	0.34	0.33	.89
Advised on nutrition	0.38	0.36	.66
Blood test administered	0.33	0.40	.10
Urine tested	0.20	0.27	.07
Acute care visit			
Throat culture taken	0.18	0.11	.09
Urine tested	0.20	0.24	.36
X-ray taken	0.12	0.13	.76

Table 6.12

**Probability of Emergency Room Visits for PPMHC  
or FFS Medicaid Patients Who Used Care:  
Logistic Regression Coefficients  
(t-statistics shown in parentheses;  
conditional on having any visit)**

Enrolled in PPMHC	0.054 (0.20)
Randomly assigned	0.159 (0.53)
Female	0.066 (0.30)
White	0.143 (0.35)
Child's age in years	-0.224 (-1.92)
Child's age squared	0.017* (2.07)
Total number of health problems listed at start	0.120 (1.13)
Diary is from second wave	-0.688* (-1.98)
Diary is from third wave	-0.949 (-1.74)
Diary describes April-September	0.599* (2.09)
Intercept	-1.101* (-2.61)

\*.01 < p ≤ .05, 2-tail test.

trary, it is concentrated in a particular group: children with no health problems at the start of the experiment. Thus, the plan appears to be targeting its services to children with the greatest health care needs.

The question remains: Why should healthy plan members have fewer acute visits than FFS children do? Earlier we suggested three reasons: The plan provides more complete care during each preventive visit, it stints on acute care, or it reduces emergency room use. Data on the content of well care visits did not offer any support for the first hypothesis. Nor is there any reason, judging by these data, to suspect the second explanation: that the plan is deliberately making care inaccessible to patients. If it were doing so, presumably we would ob-

serve a negative effect of plan enrollment on check-up visits. Moreover, the reduction in visits is limited to the most healthy children.

Although visits to the emergency room accounted for nearly one-quarter of all the Medicaid children's acute care visits, the plan did not selectively reduce ER use. In contrast to previous studies, we found that the proportion of all plan pediatric visits that occurred in the ER did not differ significantly from the proportion for FFS patients. This may occur because the PPMHC was sponsored by and located in the hospital with the largest emergency department serving Medicaid patients. Thus, as was the case in Hurley, Freund, and Taylor (1989a, 1989b), this plan may have had little incentive to divert patients from ER use.

Although plan enrollees made fewer acute care visits than FFS participants, the targeting of the reduction to children with few health problems suggests that the PPMHC was able to "rationalize" its delivery of services rather than to merely ration services across the board. In contrast to the findings in Ware et al. (1986), patients with pre-existing health conditions received as much care in the PPMHC as in the FFS system.

## 7. DISCUSSION AND POLICY IMPLICATIONS

The Robert Wood Johnson Foundation's Program for Prepaid Managed Health Care aimed to promote capitation and case management for Medicaid recipients. The program's goals were laudable: cost containment with improved quality of care and access for Medicaid recipients. But the demonstration faced many challenges.

Although several studies had shown that HMOs serving employment-based populations could reduce costs effectively (Manning et al., 1985, Luft, 1981), early efforts to encourage HMOs to serve Medicaid and Medicare were fraught with problems. In particular, California's effort to stimulate the use of HMOs for Medicaid recipients in the 1970s resulted in scandals both because of unregulated marketing practices that enabled prepaid plans to enroll recipients without providing prospective enrollees with an adequate understanding of the implications of their enrollment and because newly developed prepaid plans did not always have the service delivery capacity needed to support their enrollment base (D'Onofrio and Mullen, 1977). The latter problem was repeated in the early 1980s in Florida when one of the plans serving the Medicare program enrolled far more beneficiaries than it could provide with medical services.

Legislation in the early 1980s encouraged experimentation with new forms of case management and the use of capitation. At the same time federal and state response to these problems was to strengthen the oversight role of Medicaid agencies and to provide additional requirements for federal qualification of HMOs, including a limit on the maximum share of overall enrollment that could come from Medicare and Medicaid. Although Medicaid agencies now understood the importance of taking a more active role monitoring prepaid plans, not all of them had an increased capability or the resources to do so. In fact, several of the Medicaid agencies applied for and received funding from RWJ as part of this demonstration to support monitoring or liaison positions within the agency.

In an effort to avoid a repetition of the earlier problems, RWJ targeted providers that had already shown a strong commitment to serve the Medicaid population. Annual postselection site visits by a technical review panel as well as regular monitoring of the demonstration gave RWJ better assurance of plan integrity and more adequate performance. The disadvantage of targeting major Medicaid providers

for the demonstration was that it led to the introduction of few, if any, new providers to treat Medicaid recipients, an ongoing problem.

The PPMHC demonstration was one of several initiatives introduced into the Medicaid program in the first half of the 1980s to encourage the use of case management as a strategy for controlling costs. The Arizona Health Care Cost Containment System, Arizona's entry into the Medicaid program, mandated enrollment in approved HMO-type plans for all Medicaid-eligibles, and the Medicaid Competition Demonstrations, which encouraged experimentation with new forms of case management, were two of the largest contemporary demonstration efforts. The PPMHC demonstration differed from these other demonstrations because of its focus on more traditional HMO-type plans and its emphasis on voluntary enrollment.<sup>1</sup>

These efforts to stimulate and regulate new HMOs for Medicaid failed to recognize the barriers to development confronting these plans. HMOs that serve only employment-based populations have several design dimensions which they control to help them achieve financial independence: (1) the design of the benefit package offered, (2) the level of their capitation rates, (3) their targeted enrollment base, (4) their service provision costs, and (5) the amounts of services provided. These features are not independent of one another. The expected revenue base is determined by both the capitation rates and the planned enrollment. These, in turn, influence and are influenced by the benefit package offered and the costs and amounts of services provided.

HMOs that serve primarily Medicaid have a more limited set of design options and therefore a more difficult task. In particular, both the benefit package and the capitation rates are set primarily by the state Medicaid program. In addition, because the fee-for-service Medicaid system can set arbitrarily low provider reimbursement levels, plans that use salaried physicians and those that cannot negotiate for the same hospital rates as the Medicaid program may actually face higher service provision costs than the Medicaid fee-for-service system, which has much greater purchasing power and is therefore in a better position to negotiate or impose discounts. Thus, financial planning for Medicaid HMOs depends almost entirely on the ability of plans to set, achieve, and maintain enrollment targets because plans lack the flexibility to set or adjust their capitation rates and their

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<sup>1</sup>The one exception was a small site in Wisconsin that capped its mandatory Medicaid enrollment at 1,200 enrollees. Other mandatory enrollment projects such as the one in San Diego, California, failed to become operational.

benefit packages. Further, because their service provision costs may actually be higher than those in fee-for-service, control over the amount of services delivered has enhanced importance. We are then left to ask how well new Medicaid HMOs can affect the options that are open to them.

Like the HMOs that serve employment-based populations, PPMHCs tended to be IPA, network, and mixed-model HMOs. These organizational structures were quite complex; many involved consortia or loose networks of providers. Most physicians saw both fee-for-service and HMO patients and the latter constituted only a small share of their workload.

Securing physician participation was an important part of achieving organizational viability. The PPMHC plans frequently encountered problems, particularly in previously underserved areas. The plans relied heavily on existing community and neighborhood health centers to complete their provider networks. Although the centers were capitated, it was not clear how much, if any, of the risk was actually passed onto participating physicians. In general, financial incentives on PPMHC providers were weak, creating a greater reliance on monitoring systems for utilization control.

HMOs that serve Medicaid-eligibles face a real challenge in a voluntary enrollment environment, because plan design features such as reduced cost-sharing and added benefits that are typically used to attract membership are seldom applicable in the Medicaid populations. Further, loss of Medicaid eligibility necessitates plan disenrollment so this churning exacerbates difficulties in maintaining an enrollment base.

Marketing to Medicaid recipients represented an added difficulty. Since fee-for-service providers did not need to market, there was no provision for this activity in the capitations. Relative to plans that served employment-based populations, marketing for Medicaid was both costly and harder. It was costly because most Medicaid enrollment efforts involved a one-on-one contact between the marketer and the enrollee, whereas plans that served employment-based groups marketed to employers not employees. Enrollment efforts were harder because Medicaid recipients had few incentives to enroll. Traditional plans attract membership by reducing cost-sharing or adding benefits. Most Medicaid recipients face little or no cost-sharing in fee-for-service Medicaid. Adding benefits is also difficult because many of the programs already cover a full range of services. In others, covering new services out of low capitations was not feasible.

Monitoring and utilization control have traditionally been a shortcoming in all capitation-based plans. The absence of a billing function creates a void in both paper tracking systems and in incentives. Few plans serving public or private patients have established good management information systems.

Nearly all the plans used patient education in an effort to modify care-seeking patterns of Medicaid recipients. Case-management and gatekeeper functions within the plans were less well defined, and physician education on these tasks was limited, varying markedly across the plans. Only a subset of the plans had the capability to monitor physician use profiles.

The inadequacy of many of the plans' data systems has been noted. Neither the plans nor the state Medicaid agencies will be able to do a responsible job of monitoring and adapting programs without timely and appropriate data. New plans, particularly, need to be able to monitor use to identify inefficiencies that lead to too much or too little care.

The ability of the plan accounting systems to differentiate among types of patients and to appropriately attribute risk is not clear. Without sound financial systems, some of the costs of Medicaid patients may well be shifted to plan sponsors or to non-Medicaid patients, distorting the intent of the demonstration and potentially introducing additional inequities.

Rate-setting has been an issue for all plans that serve either Medicare beneficiaries or Medicaid recipients. In part, rate-setting is a problem because rates are nearly always imposed on the plans rather than established by them as in the case of capitations for employed populations. Further, the imposed rates are based on some percentage of fee-for-service expenditures rather than plan costs. Because Medicaid programs generally impose discounts on all providers and prepaid plans may not be able to extract the same discounts, living within the established capitations can be very hard.

Medicare capitations adjust for age, gender, and institutional status within geographic areas and prepaid plans have long argued that these are inadequate adjustments. Among HMOs that serve Medicaid recipients, many get capitations adjusted only for broad eligibility categories and geographic variation, failing to adjust for even the simplest demographics. Our work suggests that the perceived adequacy of capitation rates affects both the willingness of providers to participate and plan willingness to accept all eligible enrollees. Improved methods for setting capitation rates that include adjustments

for both patient characteristics and plan service delivery costs will be an important component of future success for HMOs serving Medicaid.

None of the rate-setting methods adjust for the health status or other predictors of medical utilization of plan enrollees. Both our study and most previous research on HMOs indicate that on average those who select HMOs have different health status than the average non-enrollee. In some cases, HMOs attract healthier patients and in others they appeal to sicker individuals. Our findings in New York indicate that plans can affect positive selection both by taking in only the healthiest cases and also by encouraging sicker or high use patients to disenroll. On the other hand, Florida attracted sicker than average patients and did nothing to encourage their disenrollment. In part, this adverse selection may have resulted from the plan's early marketing efforts that focused on hospital clinics, a strategy that certainly attracts health care users and sicker than average patients.

Epstein and Cummella (1988) summarize the literature on potential Medicare capitation adjusters that predict medical utilization and indicate that measures of perceived health, functional status, prior use, and clinical descriptors could all improve capitation estimates. At the same time, they recognize that each of these measures has important limitations for inclusion because they are (1) expensive to collect, (2) subject to manipulation, or (3) provide incentives for inefficient care.

Introducing competitive bidding into the rate-setting process is an alternative approach for achieving improved rates. This was tried successfully as part of the Arizona Health Care Cost Containment System program. Under competitive bidding, plans decide to bid and reveal information about their perceived ability to control use and costs in the population in question. The experience in Arizona suggests that plans will, in fact, participate when given the opportunity to bid, though several rounds of bidding may be required (McCall et al., 1987).

Prior research has shown that HMOs save money by reducing hospital use and that outpatient use is typically as high or higher than in fee-for-service because the reduced patient cost-sharing stimulates use (Luft, 1981). The PPMHC demonstration focused on enrolling AFDC Medicaid-eligibles, a generally young population in which most hospitalizations are for childbirth, a nondiscretionary hospitalization. From the beginning, it was recognized that reducing hospitalization in this population might prove either inadvisable or infeasible. Potential savings had to come from reductions in outpatient services. In fact, these were the patterns that we observed. Both plans had lower

use and the reduced use was attributable to lowered probability of using any care. In the New York plan, the lower use resulted because the plan attracted and retained healthier patients. In Florida, the lower use was the result of greater technical efficiency within the plan. To gain additional insight into how use was reduced in Florida, we analyzed data from the utilization diaries for children in Florida. This work indicated that the plan did not reduce check-up visits but rather decreased the use of acute care services for the healthiest children, a rational strategy suggesting that the plan may have targeted its resources effectively.

Finally, we need to ask whether the states saved money from the introduction of these PPMHC plans into the Medicaid program. Our states offered interesting contrasts, as did the evaluation findings. New York had a generous Medicaid program; Florida's was more limited. Enrollment in the New York plan was quite low; PPMHC growth in Florida was good. In New York, the plan achieved only limited enrollment and attracted healthier than average patients. Because the plan's capitation was set for the average health risk, the state paid this average for patients who were healthier than average and would have cost much less had they remained in the fee-for-service system. For the sicker patients who actually did remain in the fee-for-service system, the state paid their actual expenditures, which were higher than average. As a result the state actually paid more because of the PPMHC than it would have without the plan.

In Florida, PPMHC enrollment was much higher and the enrollees were not healthier than average. The plan successfully reduced use and consequently had the potential to save money for the state. Data limitations in Florida forced us to eliminate pharmacy use and data on newborns from our analysis, so we were unable to compare actual expenditures with the capitations; instead, we base our assertion of savings on an analysis net of these data.

It is always difficult to generalize from two sites with distinctly different experiences, but some lessons for future efforts are worth noting. First, our study reconfirms the observation that when HMOs operate in a voluntary enrollment environment, enrollment selection occurs and is an important factor in determining whether plans save money. The favorable selection experienced in New York is the more commonly observed outcome and this leads to cost increases for payers, in this case, the state and federal governments.

The absence of favorable selection in Florida and more specifically the evidence of adverse selection may be largely attributable to management incentives that went beyond PPMHC financial performance.

The PPMHC was affiliated with the area's major and most prestigious teaching hospital. Both the hospital and the PPMHC were owned by the county, which was also responsible for all indigent care and most Medicaid care. This demonstration was looked to as a mechanism to improve the efficiency of health care delivery for both Medicaid and indigent care patients. Funding, especially for the latter group, came from a fixed pool of money. In this case, if the plan were to seek only low use enrollees, the hospital would still need to care for the high use groups and there would be no net gain. The demonstration would be viewed as successful only if it could help the county and the hospital care for all patients more efficiently, so there was far less incentive within the plan to look for "good risks" and in particular, referrals and marketing were often done from the hospital's other clinics.

The second lesson from the overall demonstration was that the strategy of converting major FFS Medicaid providers to HMO-type care can work, but it requires significant start-up costs and time. Establishing proper data systems and utilization controls was the most difficult problem.

Finally, we wish to comment on the importance of study design. Our evaluation used a randomized design and followed patients longitudinally through time. We encountered many challenges in the field. As a result of both the design and the implementation difficulties, the study was costly. More important, the design was adequate to address the research questions even in New York where neither the PPMHC nor the study was able to secure plan participation at intended levels. Without the randomized design, we might have erroneously concluded that the plan in New York saved money for the state.

## **Appendix A**

### **PPMHC SITE DESCRIPTIONS**

In this appendix, we provide a basic description of the 10 operational plans. The information was drawn from the case study surveys of the medical directors, the chief financial officers, the administrators, and the state Medicaid agencies and from subsequent site visit and progress reports. The PPMHC plans are designated by the letters A-H, J, and L, and these correspond to the labels used in Section 3. For each plan, we begin with a description of the plan and its structure. This is followed by information on the provider payment arrangements and a description of the competitive environment. We also present information on the plan's incentives for utilization control and its financial structure. We conclude with information on the attitudes and interaction with the state Medicaid agency and plan growth strategies.

#### **PLAN A**

This PPMHC is sponsored by a county agency created to operate, maintain, and govern the county-owned health facilities. A large (1,250-bed) public teaching hospital charged with caring for both Medicaid recipients and the medically indigent in this county is the central core of the county health facilities network. In addition, the county owns and Plan A manages two primary care clinics. County officials look to the PPMHC and HMO-type care as a means to control costs for both its Medicaid population and its indigent care program which is supported entirely by the county. There are approximately 144,000 Medicaid-eligibles in the plan's service area. In addition, the plan expects to serve and enroll the medically indigent.

A state-licensed HMO with no plans to seek federal qualification, the PPMHC was originally developed as a staff-model HMO but intended to expand by contracting with a network of primary care clinics in the county. The clinics would assume responsibility for all primary care for plan members and would in turn receive a part of the capitation from the state. All tertiary and referral (specialty) care would be handled at the teaching hospital. The original PPMHC clinic, the staff-model HMO, was located in the hospital's outpatient department.

The plan pays all of its primary care physicians on a salary basis and all specialists on a fee-for-service basis. Plan physicians in the origi-

nal (main) PPMHC site do not see non-plan patients, but physicians in the primary care clinic network will, at least during the transitional phase.

The state is considered to have a competitive HMO market for its non-Medicaid population. Although Medicaid is a more recent entrant into the HMO market, the plan competes directly with three other HMOs in its immediate service area and indicated that concern over loss of Medicaid patients was an issue behind the development of the PPMHC.

As a staff-model HMO, the plan does not use financial incentives to control use. It does monitor the following services to assess the appropriateness of plan use patterns: inpatient stays, outpatient visits, emergency room visits, birth rates, and premature births. Individual physician use profiles are not available, and sanctions for inappropriate use are not considered.

Plan revenues did not cover plan expenses at the time of the case study survey. The plan expected to become financially viable when enrollment reached 12,000 Medicaid recipients. At the time of the case study survey, enrollment was just under 7,000, and the plan projected that it would reach break-even enrollment levels by mid-year 1989. The sponsor agreed to subsidize the plan until its enrollment goals were reached.

The state is very interested in the development of HMOs as a means of effecting greater cost savings. Bad experience in the Medicare market has led the state to take an active role in both contracting and monitoring Medicaid prepaid plans.

The plan is in the process of developing contracts with a network of existing primary care clinics. A formal relationship between the clinics and the sponsoring institution already exists and FFS patients seen in these clinics are referred to the hospital for specialty care, lab services unavailable at the clinic, and hospitalization. The PPMHC plans to develop capitation contracts with each clinic. The size of the capitation payment the clinics would receive from the plan will be determined as part of contract negotiation and will depend upon the service capability of the clinic.

With the addition of the entire network of new clinics, the plan projects that its enrollment will reach 20,000 Medicaid recipients. This will be supplemented with indigent care enrollment as well. The county bears the full burden for capitations for indigent care enrollees.

## PLAN B

This PPMHC is sponsored by a community health center (CHC) organization established to provide comprehensive health services to the residents of five rural counties in the state. The CHC has its main center in one county, with auxiliary centers in each of the other four counties. At the time of the case study surveys, the PPMHC functioned out of the main center and included one solo practitioner in private practice. A five-year expansion plan was proposed that would extend the PPMHC to include the satellite centers in the other counties, additional private practitioners under contract, and research and local hospitals.

The PPMHC did not have either its own administrative and marketing or its own medical staffing but instead used part-time CHC personnel. The CHC governing board oversaw the PPMHC as well. The plan has a state license as an HMO.

CHC physicians are salaried and see both PPMHC and fee-for-service patients. The plan also intended to contract with private physicians in solo practice, and these providers were to be paid on a capitation basis. At the time of the case study survey, only one solo practitioner participated in the PPMHC.

The plan indicated that it monitored inpatient admissions with preadmission review and that individual physician utilization profiles were constructed and sanctions used for inappropriate use profiles. There was no indication of any financial incentives.

Referral specialists were all paid on a fee-for-service basis and hospitals received Medicaid line item reimbursement rates.

The plan had purchased a reinsurance policy from a private insurance company with a stop loss of \$35,000.

The entire catchment area was designated as medically underserved. Pre-PPMHC utilization statistics were very low. The state Medicaid program covered only the categorically eligible, leaving many medically needy patients without any coverage. There were no competing HMOs, either commercial or Medicaid, and the plan spent a fair amount of time educating its members on the concept of HMOs, the coverage, and the restrictions.

The CHC and the plan used medical chart review and provider sanctions to control use. Actual utilization statistics suggested that underuse was a much bigger problem than overuse, especially in ambulatory settings.

The plan was a long way from financial viability without grant support. As a CHC, Plan B continued to depend on grant funding. The PPMHC's financial projections indicated that an enrollment of 13,000 would be needed to break even. The original plan established a five-year enrollment goal at 15,000, one-third each Medicaid, Medicare, and employer groups. Independent evaluators found that the employer group goal was quite unrealistic, and projections for Medicaid and Medicare enrollment alone fell short of the break-even enrollment target.

The state Medicaid agency had very little experience with HMOs. Although the agency had assigned a staff person to work with the plan and regular meetings were held, the plan indicated that the state was unable to provide much assistance.

The PPMHC intended to expand into the four remaining rural counties and to contract with additional physicians in solo practice. By year end 1987, the plan had enrolled 1,704 members, 1,089 from one county.

## PLAN C

Plan C, sponsored by a 548-bed university hospital and an HMO, began to offer services in January 1984 to the general population and in August 1984 to the AFDC-eligible Medicaid and General Relief population. The PPMHC was a nonprofit provider group, a subcomponent of providers within a federally qualified HMO. Seven satellite clinics, all located in one county, were also part of the PPMHC system.

The county, with a population of 339,194, was the primary catchment area of the PPMHC. Eligibility for enrollment in the PPMHC subcomponent of the HMO was limited to AFDC-eligible Medicaid recipients, a group constituting only 3 percent of the county's population (approximately 10,176 individuals), and the General Relief population.

The plan was administered by a 13-member board that met monthly. Board membership included the plan administrator, the plan medical director, other plan providers, and local citizens with specific expertise in areas such as financial planning. The hiring authority for PPMHC personnel was vested in the heads of the various medical and surgical departments of the academic medical center hospital and clinics.

Four hundred physicians from the medical school faculty were loosely affiliated with the PPMHC, but most care for PPMHC enrollees was

provided by 34 physicians under contract to the PPMHC. Faculty physicians received a salary for teaching and research, but all clinical income was generated from patient revenues. Individual primary care physicians received 20 percent of the capitation payment, which amounted to less than \$10 per enrollee per month in 1987. The only specialists who received a part of the capitation were those who provide psychiatric outpatient care; all other specialists were paid on a fee-for-service basis. Hospitals were paid at the Medicaid fee-for-service rate.

Individual physicians determined the number of patients that constituted a full-time workload, but the number was generally between 500 and 1,000 patients per provider. Residents and interns were not used as primary care providers by the PPMHC.

The state reinsured the plan with a \$15,000 stop loss for hospital inpatient services only.

Plan C was organized to prevent the loss of Medicaid patients to other providers. Rapid growth of HMOs in the county was occurring at the time the PPMHC was developed. At that time, the state Medicaid agency covered 30 percent of the Medicaid population with prepaid contracts.

Four HMOs in the PPMHC service area competed for Medicaid enrollees, and these were viewed as strong competitors, but physicians in private practice and neighborhood health clinics were not. The majority of providers in the area were in HMOs, although some provided services on a fee-for-service basis as well.

The PPMHC had an inpatient hospital preadmission review program for all diagnoses, and to monitor length of stay used a concurrent review for selected diagnoses. The utilization review program focused on inpatient stays, specialist referrals, and durable medical equipment expenses.

The PPMHC created physician-specific utilization profiles and used them to monitor physician practice patterns. However, no sanctions were employed against physicians who exceeded plan standards for use of services, referrals, or hospitalizations.

The PPMHC was dependent on its sponsors as well as RWJ funds for financial viability. It had not reached its break-even enrollment level of 12,000 enrollees at the time of our case study surveys.

The PPMHC reported that there was tension between the PPMHC and the Medicaid agency over the adequacy of the capitation rates. As a result, the PPMHC's parent HMO had restricted total new Med-

icaid enrollment to 2,200, a limit that had already been reached. If the PPMHC wanted to increase its Medicaid enrollment, it had to seek Medicaid-eligibles from other providers within the parent HMO. This posed an interesting dilemma for the state Medicaid agency, since it had stipulated that enrollment in the PPMHC was mandatory for the general assistance population, and enrollment in an HMO (whether PPMHC or one of the others in the area) was mandatory for the AFDC population.

## PLAN D

Plan D, a federally qualified staff-model HMO, had the largest service area—12,000,000 population—of all the PPMHCs. About 10 percent of this population was eligible for Medicaid. Sponsors of the plan were an HMO and a neighborhood health center. The PPMHC was governed by a 25-member board (of whom 17 are consumers). Ten hospitals were under contract to Plan D, although 46 hospitals were loosely affiliated with the plan. Ten private medical groups were under contract, and one community health center rounded out the provider system.

The plan collected premiums and paid the primary care medical groups a fixed monthly capitation. All physicians were salaried and the plan paid hospitals on a discounted per diem basis. Specialists were paid on a fee-for-service basis. The primary care medical groups and community health clinic were at risk for all ambulatory care (including in-area emergency room use) and physician costs (except hospital-based physician costs, which the plan covered). All pharmacy, outpatient lab, glasses, and dental costs also accrued to the group practice or to the community health center.

The state Medicaid agency currently contracted with 33 prepaid plans that covered 10 percent of the state's Medicaid population. Four HMOs competed with Plan D in their service area for the Medicaid population. Physicians in private practice also treated Medicaid patients in that area.

Plan D served Medicare patients as well, and the inclusion of this population had presented some major financial problems. In March 1987, Plan D filed for protection from creditors under Chapter 11 of the bankruptcy laws because of a \$12 million loss in fiscal years 1985–86 and was in the process of reorganizing. The PPMHC funding was intended to support a major expansion into a new area within the state. This expansion was postponed because of the bankruptcy action.

Inpatient stays, outpatient visits, and specialist referrals were all monitored to assess appropriate utilization. Preadmission inpatient hospital review was required for all diagnoses, as was concurrent review.

Physician-specific utilization profiles were not created, nor were sanctions employed against physicians who exceeded plan standards for use of services, referrals, or hospitalizations.

The state Medicaid agency had a staff person appointed as liaison to the plan and, in addition, conducted an annual audit of quality of care and periodic on-site monitoring of medical facilities.

The PPMHC reported that the failure of the proposed Medicaid "Expanded Choice Program," which would have made HMO enrollment mandatory for the Medicaid population in several counties where the plan had established networks, had a negative effect on plan enrollment.

## PLAN E

Plan E is sponsored by an academic medical center, a 1,087-bed facility; by a federally qualified HMO; and by a community hospital. Neighborhood health centers complement the delivery system, which has seven sites where Medicaid patients may obtain care. The PPMHC network includes 15 affiliated hospitals, 5 direct service sites, 30 IPA sites, more than 160 primary care physicians, 750 affiliated specialists, 12 nursing homes, home care/hospice agencies, medical labs, and pharmacies. Plan E is a mixed-model HMO. The service area for the Medicaid population covered by the PPMHC is a major eastern city, with a population of 753,700, of which 24 percent are eligible for Medicaid.

Nineteen physicians (11 internal medicine specialists and 8 pediatricians) are members of the only multispecialty group under contract to the plan and provide care at the direct service sites only. Additional physicians, including obstetricians, ophthalmologists, orthopedists, and podiatrists, come from several multispecialty groups that are under contract to the plan. Interns and residents do not provide care to PPMHC members. The PPMHC is located in an all-payor state, so the PPMHC pays hospitals at the established rate.

The state Medicaid agency contracted with five prepaid plans that covered 8 percent of the Medicaid population. Three HMOs in the PPMHC's market area served the Medicaid population, and those

were viewed as competitors, as were physicians in private practice and neighborhood health centers.

Plan E reportedly reviewed all services, using a concurrent review for all diagnoses to monitor average length of stay. Prior authorization was required for inpatient stays. Physician-specific utilization profiles were not created. Insufficient or inadequate care was monitored by prospective and concurrent review.

Plan E projected reaching a break-even point with revenues in January 1988. The RWJ foundation funds were used to support developmental efforts such as the Management Information System, rate development, obtaining approvals, and establishing working relationships with the state, activities that are essentially one-time in nature with significant start-up but lesser continuation costs. The sponsoring institutions did not provide any financial assistance to the PPMHC nor absorb losses that accrued to the plan. None of the capitation payment was allocated to a reserve fund. Plan E had projected a Medicaid enrollment of 15,000 by January 1, 1988, and it had reached 87 percent of this goal by the end of December 1987.

Plan E was working with the Medicaid agency to accelerate enrollment growth by developing a program of membership incentives and was seeking state approval for expanding into untapped urban and rural areas. The Medicaid agency was helpful in getting a waiver for guaranteed eligibility for the PPMHC (although it took more than two years for the waiver to be granted).

## **PLAN F**

Plan F serves a major eastern city and county with a population of 1.6 million in the service area. One-quarter of this population is Medicaid-eligible. The PPMHC sponsor is a state-licensed IPA model HMO. A five-member governing board comprising the plan administrator, plan enrollee representatives, and community leaders provides guidance to the PPMHC. Plan F's network includes five community health clinics.

Both individual primary care physicians and individual specialists received a part of the capitation payment. Primary care physicians were paid on a capitation basis, which translated into \$16.99 per member per month. Specialists were paid on both a capitation and fee-for-service basis. One-hundred sixteen primary care physicians from several multispecialty groups were under contract to the plan, and 11 primary care physicians in solo practice in the community

were members of an IPA contracting with the plan. A full-time caseload for a physician was considered to be 1,700 plan members.

A portion of the capitation (\$3.00 per patient per month) was withheld for hospitals as part of the risk-sharing. Hospitals were paid at an "all payer" rate established by the state.

The state Medicaid agency contracted with five prepaid plans that covered 8 percent of the state's Medicaid population. Two HMOs in Plan F's catchment area served the Medicaid population: these were viewed as competitors, as were physicians in private practice and neighborhood health centers.

Plan F monitored a variety of services to assess appropriate utilization including inpatient stays, outpatient visits, specialist referrals, x-ray, pharmacy, and laboratory services. Concurrent review of all diagnoses is used to monitor inpatient stays. Physician-specific profiles were used to monitor physician practice patterns, but the plan did not employ sanctions against physicians who exceeded plan standards for use of services. Quality assurance programs and chart review were used to monitor insufficient/inadequate care. The utilization of referral services was controlled by putting the contracting IPA at risk.

Plan F's rate of inpatient stays was 20 percent above that projected; outpatient visits were 17 percent higher than projected, but the actual number of emergency room visits was consistent with the projected rates.

As of the March 1987 survey, Plan F's revenues equaled or exceeded their expenditures, indicating that the plan had some financial stability. The plan retained 5 percent of its capitation as a reserve fund. The stop-loss program provided by the state paid 85 percent of all charges greater than \$7,000 but not exceeding \$27,000 for inpatient care. The state paid 100 percent of charges in excess of \$27,000.

The Medicaid agency assisted Plan F in obtaining waivers for freedom of choice, statewide operation, guaranteed eligibility, locality as a central broker, and for HMO population requirements.

## PLAN G

Plan G was sponsored by a medical center, a 532-bed community hospital in a major eastern city. All plan physicians were salaried by the sponsoring medical center and saw both plan and fee-for-service patients. The plan was governed by the board of the sponsoring institution, and plan employees were also employees of the medical center.

The plan was housed within the hospital, and the plan administrator reported to the hospital vice president for ambulatory services.

The plan originally received approval to market to Medicaid-eligibles in the three zip codes immediately surrounding the hospital. This area included a Medicaid population of approximately 20,000 AFDC Medicaid-eligibles. The plan later requested and received permission to market in two adjacent zip codes, adding approximately 15,000 Medicaid-eligibles to the market area. Original enrollment goals for the plan included 10,000 Medicaid, 3,000 Medicare, 4,000 union, 1,000 factory and 2,000 medically indigent, a total enrollment of 20,000.

The plan provided services primarily through physicians at the medical center. A satellite facility located several blocks from the hospital could provide services to plan members. The plan originally proposed to locate providers in the two new zip codes, as these areas were considered to be medically underserved, but had not done so at the time of the case study survey.

All plan physicians were salaried by the sponsoring organization. There was no risk-sharing and physicians treated both plan and FFS patients. Of the specialists, 90 percent were paid on a salaried basis and the remaining 10 percent were paid fee-for-service. The plan paid its sponsor the Medicaid visit fee for each visit to a staff physician by a plan member. The sponsor in turn used these monies to partially offset staff physician salaries. The plan indicated that 1,050 patients constituted a full-time primary care workload and that PPMHC physicians could not refuse to accept new patients. With 14 primary care providers, plan patients did not constitute a significant portion of participating physicians' workload.

The PPMHC competed with its sponsoring institution, physicians in private practice, and a well-established HMO. Preventing the loss of Medicaid patients to other providers was not given as a concern leading to the development of the PPMHC. Lack of knowledge of HMOs and a poor Medicaid service record by the competing HMO were often stated as impediments to the PPMHC development. Unlike most of the other plans, Plan G did not have and was not seeking either state or federal designation as an HMO.

Although there were no financial incentives for utilization control, the plan did use utilization review activities to monitor services. The list of monitored services included inpatient stays, outpatient visits, specialty referrals, radiology, pharmacy, dental visits, optometry, and the use of medical appliances. Physician-specific use profiles were con-

structed to monitor both excessive and insufficient use patterns; however, no formal sanctions were employed against physicians exceeding plan standards.

Plan revenues did not currently cover plan expenses. The fiscal officer reported that the plan would break even by the time the RWJ Foundation grant ran out, but the projected break-even enrollment, 4,000, seemed quite low compared to the other PPMHC plans. Despite the low break-even target, the plan administrator reported projected enrollment targets for year-end 1987 that fell short of the break-even level. Clearly, the plan had a history of difficulties meeting its enrollment targets. Expansion to the intended new sites remained in the planning phases without clear on-stream starting dates. Without an expansion into new areas, the plan appears destined to fall short of its enrollment targets.

To date, the state has experienced relatively low HMO penetration for both employer groups and Medicaid recipients. The state has recently enacted Medicaid reform legislation that promotes the development of managed care for Medicaid.

## PLAN H

Plan H served the low-income population of a metropolitan county in an eastern state, an area with approximately 200,000 Medicaid recipients. The plan was sponsored by a consortium of four hospitals and affiliated with an existing HMO. The four sponsoring hospitals were academic medical centers with a combined capacity of 1,425 beds; one of the four hospitals was a children's hospital. Although the HMO formally contracted with the state Medicaid department, capitation funds and responsibility for the management and delivery of health services was within the PPMHC. The plan's board of directors had eight members, two from each of the sponsoring hospitals, including the chief executive officer or a senior medical representative. The plan also had its own executive director and separate task forces for each of the following functions: administration/marketing, patient care, finance, and legal affairs. The plan purchased some administrative services from the HMO; these included data processing for enrollment and claims, and employer group marketing. At the time of the initial contract, the HMO, an IPA-type plan, had been operational for six years. Because of its affiliation with an HMO, the plan was not seeking independent HMO designation.

Like its affiliated HMO, Plan H was an IPA-type model that capitated its primary care physician providers. The plan contracted with 74

physicians, all of whom were on the staff of one of the sponsoring hospitals. Approximately a third of the physicians were employees of a sponsoring hospital, another third were in solo practice, and the remainder worked at community/public health centers. Primary care physicians did not work full time for the PPMHC but had to be willing to accept a minimum of 150 plan members. A full time workload was considered to be 700 patients, although it did not appear that the plan limited enrollment with a given physician to this level. Providers received \$7.42 per member per month (9 percent of the total capitation payment), and 20 percent of this figure was withheld to cover cost overruns.

At the time of the case study surveys, interns and residents were not used by the PPMHC. However, plans called for the introduction of residents into case-managed settings as a strategy for expanding primary care capacity.

Referral specialists were all paid fee-for-service, but 20 percent of the fee was withheld to cover cost overruns; 20 percent of the capitation, more than twice the primary care allocation, was allocated to referral care.

Each sponsoring hospital received a per diem negotiated by the plan with 20 percent withheld; 39 percent of the capitation had been allocated to cover hospital and lab work. The state reinsured the plan with a \$10,000 stop loss for hospital inpatient services only.

Although HMOs were not major Medicaid providers at the time of the PPMHC application, the state had set aside monies to promote and encourage HMO enrollment for Medicaid recipients. Two HMOs in the PPMHC marketing area already had Medicaid contracts, and negotiations were under way between the state and the third HMO. Preventing the loss of Medicaid patients to other providers was listed as one issue that led to the development of the PPMHC. Neighborhood clinics, HMOs, and hospital emergency rooms were perceived to be the primary providers for Medicaid recipients in the PPMHC market area. However, HMO penetration for the Medicaid population in this market area was quite low.

By capitating its primary care providers and withholding 20 percent from the primary care capitation and the referral and hospital payments, the PPMHC had fairly strong financial incentives for utilization control. Primary care providers were not, however, at risk for referral and hospital costs.

The plan also used utilization review of inpatient stays and pharmacy use to monitor the appropriateness of physician practice styles and

indicated that sanctions were employed against physicians who exceeded standards on use of services. However, physician practice profiles were not available to monitor practice patterns. Review focused primarily on concurrent review of lengths of inpatient stay for all diagnoses.

The financial viability of the plan depended upon the RWJ Foundation grant funds. With these funds and the capitation payments, the plan revenues have exceeded plan expenses to date. Excess revenues have been used to create a contingency fund for catastrophic illness claims. The sponsoring institutions were at risk for losses on the delivery of medical services, though they have not had to provide funds to date. The plan retained 8 percent of its capitation in a reserve fund. The plan expected to become financially independent when it reached a Medicaid enrollment of 19,000 members.

The political environment at the state level initially encouraged the development of capitated plans. At the time of the case study surveys, the state was considering a contract with a Health Insuring Organization (HIO), which could effectively eliminate the PPMHC.

Enrollment as of March 1987, 18 months after the first contract was signed, reached 7,762, primarily in AFDC and AFDC-related categories. A very small contingent, 370 members, of employer group enrollees were included in this figure. In 1987, the plan projected reaching 15,000 Medicaid enrollees and 1,500 employer group enrollees by January 1988.

Plan strategies to achieve these targets included expanding provider capacity in specific neighborhoods, developing affiliations with community and city health centers, introducing residents into case-managed settings to expand primary care capacity, and introducing marketing efforts to Medicare patients. The plan intended to go slowly with the latter effort. None of these growth strategies would alter the plan's organizational structure. It was not clear how the new health center affiliations would affect marketing strategies. At the present time, marketing efforts were focused at the public assistance offices and not at the plan's service locations.

## **PLAN J**

Plan J, a not-for-profit HMO certified to operate in October 1984, offered services to the Medicaid population in seven counties of a mid-western state. The plan became operational in March 1985, and its current network included 300 physicians, 17 organized primary care centers, 14 affiliated hospitals and a large number of individual

physicians offices. Plan J was a new entity, governed by a 15-member board that included representation from plan enrollees and others.

Primary care physicians were paid on a capitation basis, with capitation rates varying by enrollee age and sex. The capitation payment included lab costs. The 72 primary care physicians came from several multispecialty groups under contract to the PPMHC. Specialists were paid on a fee-for-service basis. No funds were withheld or set aside for any purpose.

Inpatient hospital services were paid on a per diem basis with a guaranteed minimum to each hospital. The per diem figure provided in response to the survey, \$473, was a composite rate for all participating hospitals, as their rates varied by type of service. The rates were not discounted.

The state Medicaid agency contracted with eight prepaid plans that covered 12 percent of the Medicaid population. There were nine HMOs in the area that served the Medicaid population, and HMOs were viewed as direct competitors, as were physicians in private practice. The PPMHC reported that, although competitors reacted defensively, some entered into risk-sharing agreements with the PPMHC and other HMOs.

Preadmission review was required for all inpatient stays as one way to control utilization. Physician-specific utilization profiles were not created, nor were sanctions employed against physicians who exceeded plan standards for use of services, referrals, or hospitalizations. Insufficient or inadequate care was monitored by a concurrent review of inpatient care; exceptions were reported and there was a follow up of complaints made either by physicians or patients.

All referrals required prior authorization with limits on the nature, extent and duration of service. Claims for unauthorized services provided by non-plan physicians were denied. The plan was not at risk for emergency room charges.

Inpatient stays for calendar year 1986 were 24 percent above projections, but outpatient visits were 13 percent below projections, and emergency room visits were 20 percent below projections for this same period.

The plan projected that it would be at a financial break-even point in July 1987. In August 1987, it disentangled its operations and financial affairs from its sponsor. With additional capital resources from two other organizations, the plan was able to fund 1987 losses. However, the plan continued to rely on the RWJ Foundation grant for op-

erating support, projecting break-even in July 1988, when membership should have reached 10,353 members.

The state required that all HMOs maintain a deposit of cash or securities in the amount of \$100,000. In complying with this requirement, Plan J restricted its operating reserves. An additional \$18,000 per year was required for insolvency insurance. Plan J did not set aside capitation funds for a reserve account.

The plan reportedly was not able to achieve capitation rates under the contract that adequately covered the costs of providing services to the Medicaid population. The Department of Public Assistance had also frozen the Medicaid enrollment at September 1987 levels which, combined with previous actions, effectively resulted in the de-marketing of HMOs to Medicaid recipients for approximately four months. Plan J then terminated enrollment staff. Active marketing to DPA recipients began again in October 1987, but the plan had to recruit and train qualified enrollment staff replacements.

## PLAN L

The Municipal Board of Health was the original sponsoring agency for this PPMHC. Initial plans called for the development of the PPMHC as an organization within the municipal structure of the Board of Health. Early in the planning phase, the Board of Health, with support from the City Council and the city solicitor, decided that a separate legal structure for the PPMHC would be preferable, so Plan L was incorporated as a not-for-profit organization. Plan L obtained state licensure as an HMO. As a not-for-profit corporation, it received no funding support from the Board of Health. The decision to incorporate precluded subsidization by the Board of Health and necessitated a request for additional funds from the RWJ Foundation to achieve financial viability.

Plan L contracted with 10 independent health centers and eight hospitals, including a teaching hospital and a children's hospital, to provide medical services for its members. The 10 health centers were the primary care delivery system for the municipal health department. The HMO contracts represented an effort to improve the cost-effectiveness of care delivered through the county system.

Operating in one county, Plan L, an IPA-model HMO, had a market service area with approximately 63,000 AFDC Medicaid-eligibles. Their Medicaid contract covered only AFDC Medicaid-eligibles and did not include other categorically eligible groups.

The plan had 67 primary care providers: 51 were health center employees and 16 were solo practitioners under contract to the plan. Approximately 80 percent of the primary care physicians were paid on a capitation basis; their allocation was 26 percent of the capitation payment. Twenty percent of this figure was to cover cost overruns. Just over 20 percent of the primary care physicians were paid on a fee-for-service basis. All primary care providers treated fee-for-service patients in addition to PPMHC patients. The plan did not impose either minimum or maximum workload standards on participating providers. Referral specialists were all paid on a fee-for-service basis; most received a discounted rate.

Hospitals received a per diem negotiated by the plan. The state reinsured the plan with a stop-loss of \$20,000. For expenditures over \$20,000, the state paid 85 percent and the plan paid 15 percent.

At the time of the case study surveys, two other HMOs marketed to Medicaid recipients in the Plan L catchment area, though Plan L was the first to receive its Medicaid contract. Penetration was relatively low, partially because implementation was delayed by difficulties with Medicaid HMOs in other parts of the state. The plan listed its direct competitors as neighborhood clinics, HMOs, and PPOs, and listed preventing loss of Medicaid patients to other providers as one of the incentives for its development.

In addition to the financial incentives, the plan monitored inpatient stays, outpatient visits, specialist referrals, and pharmacy use to assess appropriate utilization patterns. Physician-specific utilization profiles were constructed to monitor practice patterns and sanctions were employed when inappropriate patterns were detected. Despite the reported availability of the physician use profiles, the plan was unable to determine how its actual average use compared to its planned use.

Because the plan had no formal ties to other organizations, it had to generate sufficient revenue to cover its expenses. The plan became operational in March 1986 and requested additional RWJ Foundation funds to cover its expenses during the first operational year. The plan expected to achieve financial viability when enrollment reached 12,000 members sometime during 1987.

Problems with Medicaid HMOs in other parts of the state led the State Medicaid Agency to delay the approval of Plan L's start date. Since the approval, the plan and the state have developed an effective working relationship.

The PPMHC had 8,800 enrollees as of March 1987, 12 months after its inception. Enrollment targets for January 1988 were 14,100 Medicaid AFDC enrollees and 1,500 employer group enrollees.

The plan marketed primarily at its delivery sites and had not identified any new strategies for further growth. Enrollment projections were labeled "optimistic" by the site visit team.

# Appendix B

## CASE STUDY QUESTIONNAIRES

P P M H C

### CASE STUDY OF CAPITATION AND CASE MANAGEMENT

MODULES: BACKGROUND  
ORGANIZATION, STRUCTURE AND DELIVERY  
OF SERVICES  
PLAN DESIGN AND IMPLEMENTATION  
ENROLLEES/PATIENTS

to be completed by  
Plan Administrator

March 1, 1987

INSTRUCTIONS: Your answers to this questionnaire will provide background information for our case study of \_\_\_\_\_.

- Where figures are requested, we ask that these be current as of December 31, 1986; if figures as of that date are not available, please enter the most current figures and indicate at the end of the survey the effective date.
- Choices have been provided to facilitate your response. If none of the offered choices fits, write in responses that provide a more accurate answer for your PPMHC.
- If you need additional space in which to answer a question, please write on the reverse of the sheet or attach another sheet with the question number and the continuation of your response.
- In the ORGANIZATION module, Question 1a requests an organization chart of the plan. Question 2a requests an organization chart showing the relationship between the plan and other organizational entities.
- In the PLAN DESIGN module, Question 20 requests information on the benefits available through the PPMHC. You may attach a brochure on plan benefits instead, if you prefer. Question 43 asks for a description of formal efforts to educate Medicaid enrollees about appropriate utilization of the plan. Question 44 requests projected and actual utilization data that may require you to refer to other files.
- In the ENROLLEES module, Questions 1, 9, and 19 request enrollment data; you may need to refer to other files for this information.

When you have completed this questionnaire, please return it to RAND in the enclosed stamped, self-addressed envelope. If you have any questions or need assistance in completing the questionnaire, please call Phoebe A. Lindsey at (213) 393-0411, ext. 7606.

## BACKGROUND

1. How do you define your service area?

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2. Are you restricted to marketing in this area?

(Circle one)

Yes. . . . . 1  
No . . . . . 2

3. What is the total population of your service area? \_\_\_\_\_

4. What percent of the total population is Medicaid-eligible?

\_\_\_\_\_ percent

5. Where were Medicaid eligible patients getting care before enrolling in the PPMHC?

(Circle all that apply)

At the sponsoring facility . . . . . 1  
At community health centers . . . . . 2  
At the county hospital . . . . . 3  
Other \_\_\_\_\_ . . . . . 4

6. Do Medicaid enrollees have to live in your marketing area?

(Circle one)

Yes. . . . . 1  
No . . . . . 2

## BACKGROUND, continued

7. What were the issues/concerns that stimulated your participation in the PPMHC?

(Circle all that apply)

Reduce Medicaid costs through capitation . . . . . 1  
 Reduce cost of other payors through capitation . . . . . 2  
 Reduce/eliminate inappropriate utilization of services . . 3  
 Provide continuity of care for patients not receiving  
     such care. . . . . 4  
 Improve quality of care to target populations. . . . . 5  
 Increase access to primary care for target populations . . 6  
 Prevent loss of Medicaid patients to other providers . . . 7  
 Opportunity to increase revenues . . . . . 8  
 Other \_\_\_\_\_ . . . . . 9

8. Please list all HMOs in your service area that serve the Medicaid population.

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

9. What providers are in direct competition with the PPMHC in its service area?

(Circle all that apply)

Physicians in private practice . . . . . 1  
 Neighborhood clinic. . . . . 2  
 PPMHC sponsor(s) . . . . . 3  
 Other prepaid plans, HMOs. . . . . 4  
 PPOs . . . . . 5  
 Other \_\_\_\_\_ . . . . . 6

10. How have fee for service providers reacted to the presence of the PPMHC?

\_\_\_\_\_  
 \_\_\_\_\_

EFFECTIVE DATE FOR DATA PROVIDED: \_\_\_\_\_

NAME(S) AND TITLE(S) OF INDIVIDUAL(S) PROVIDING THIS INFORMATION:

\_\_\_\_\_  
 \_\_\_\_\_

# ORGANIZATION, STRUCTURE, AND DELIVERY OF SERVICES

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## ORGANIZATION, SPONSORSHIP, AND GOVERNANCE

1. Is there a written organization chart that defines lines of authority and responsibility within the plan?

(Circle one)

Yes..... 1 --> Go to 1a

No..... 2 --> Go to 2

1a. Please attach a copy of the plan's organization chart.

2. Is the plan part of a larger organization with separate organizational entities?

(Circle one)

Yes . . . . . 1 --> Go to 2a

No . . . . . 2 --> Go to 3

2a. Please attach a copy of the organization chart showing the relationship between the plan and other organizational entities.

3. Was the PPMHC created as a new entity in order to meet the requirements of the Johnson Foundation's program announcement or is it an adjunct to an existing prepaid health program?

(Circle one)

New entity..... 1

Addition/adaptation of existing program... 2

ORGANIZATION, continued

4. Who sponsors the plan?

(Circle all that apply)

- HMO..... 1
  - Academic medical center..... 2
  - Community hospital..... 3
  - Neighborhood health center..... 4
  - Physician group..... 5
  - Insurer..... 6
  - Other..... 7
- Please specify: \_\_\_\_\_

5. Does the plan have its own governing board or is the plan governed by the board of a larger organization such as one of the sponsors?

(Circle one)

- Own board..... 1
- Governed by board of larger organization..... 2
- No board..... 3

6. What is the membership of this board?

Number of board members: \_\_\_\_\_

7. Which of the following individuals/groups are represented on this board?

(Circle all that apply)

- Plan administrator..... 1
  - Plan medical director..... 2
  - Other plan providers..... 3
  - Plan enrollees..... 4
  - Others..... 5
- Please specify: \_\_\_\_\_

PLAN EMPLOYEES

8. Who has primary authority for hiring the health care personnel for the plan?

(Circle one)

- Sponsoring entity..... 1
  - Plan administrator..... 2
  - Medical director..... 3
  - Chairman of the board..... 4
  - Other..... 5
- Please specify: \_\_\_\_\_

## ORGANIZATION, continued

9. How many full-time equivalents (FTE) are employed (i.e., paid a salary) by your plan in each of the following personnel categories?

	No. FTE
Administrative staff	_____
Marketing/enrollment	_____
Quality Assurance	_____
Physicians	_____
Physicians Assistants/Nurse Practitioners	_____
Nurses	_____
Other	_____

Please specify: \_\_\_\_\_

10. How many full-time equivalents (FTE) are under contract to your plan in each of the following personnel categories?

	No. FTE
Administrative staff	_____
Marketing/enrollment	_____
Quality Assurance	_____
Physicians	_____
Physicians Assistants/Nurse Practitioners	_____
Nurses	_____
Other	_____

Please specify: \_\_\_\_\_

HMO STATUS
------------

11. What was the plan's HMO status at the time of the PPMHC application to RWJ in 1984?

(Circle one)

Federally qualified.....	1
Federal qualification pending.....	2
State licensed.....	3
State licensure pending.....	4
Not seeking HMO designation.....	5

12. What is the plan's current HMO status?

(Circle one)

Federally qualified.....	1
Federal qualification pending.....	2
State licensed.....	3
State licensure pending.....	4
Not seeking HMO designation.....	5

## ORGANIZATION, continued

PROVIDER PARTICIPATION
------------------------

13. How many hospitals are involved with the plan? Please mark the major hospitals (those hospitals that sponsor the plan, those hospitals owned by the plan or those to which the plan sends a significant proportion of its enrollees on a regular basis) with an asterisk (\*).

Hospital name/location	Bed size
* _____	_____
_____	_____
_____	_____
_____	_____
_____	_____

14. At how many different locations do you provide outpatient care? How many physicians are associated with each location? How many of these locations are subcontractors of the plan?

Clinic name/location	No. of FTE Physicians	Subcontractor?	
		Yes	No
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

ACCESS
--------

15. What are the service hours of the plan's outpatient clinics?

Weekdays \_\_\_\_\_ a.m. to \_\_\_\_\_ p.m.  
 Weekends/Holidays \_\_\_\_\_ a.m. to \_\_\_\_\_ p.m.

16. What arrangements are available for after-hours access for the following services?

Medical advice \_\_\_\_\_  
 Emergency care \_\_\_\_\_

## ORGANIZATION, continued

17. Must enrollees receive nonemergency care only at their primary delivery sites?

(Circle one)

Yes..... 1  
No..... 2

18. What systems are in place to ensure that enrollees can get emergency care after hours or when out of the service area?

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19. Where are routine lab and x-ray services provided to plan participants?

(Circle one)

At central plan site..... 1  
At all plan sites..... 2  
In free-standing labs..... 3  
At hospital owned by plan..... 4  
At hospital that owns plan..... 5  
At hospital(s) with plan contracts..... 6  
Other..... 7  
Please specify:\_\_\_\_\_

20. If the patient's choice of provider cannot be met or the patient expresses no preference, who is responsible for assigning new patients to providers?

(Circle one)

Physician..... 1  
Nurse..... 2  
Clerk..... 3  
Other..... 4  
Please specify:\_\_\_\_\_ 5  
No one..... 5

## ORGANIZATION, continued

21. If the patient's choice of provider cannot be met or if the patient expresses no preference, what are the criteria for matching new patients with providers?

(Circle all that apply)

Availability of appointment. . . . .	1
Disease/medical condition. . . . .	2
Patient's language . . . . .	3
Physician preference . . . . .	4
Patient's gender . . . . .	5
Patient's age. . . . .	6
Patient's ethnicity. . . . .	7
Other. . . . .	8

Please specify: \_\_\_\_\_

APPOINTMENT SCHEDULING
------------------------

22. How are appointments scheduled?

(Circle one)

Regular appointments at scheduled times . . . . .	1
Block appointments. . . . .	2
No scheduled appointments . . . . .	3
Other . . . . .	4

please specify: \_\_\_\_\_

23. What techniques are used to remind patients of upcoming appointments?

(Circle one)

Postcards are sent in advance of appointment. . . . .	1
Reminder card is given at time appointment is made. . . . .	2
Phone call is made several days in advance of appointment . . . . .	3
Other . . . . .	4

please specify: \_\_\_\_\_

There is no formal reminder . . . . . 5

24. What proportion of scheduled appointments are missed because the patient failed to appear?
- \_\_\_\_\_

ORGANIZATION, continued

25. What is the average number of minutes scheduled for patients with each of the following types of visits?

	Average no. minutes/appointment
First visit to practice	_____
Followup visit	_____
First visit to new physician	_____

26. On average, how many patients does a primary care physician see in an hour?

\_\_\_\_\_ patients per hour

PATIENT TRIAGE

27. Who provides routine well-child care in your plan?

(Circle all that apply)

- General practitioner . . . . . 1
- Family practitioner. . . . . 2
- Internist. . . . . 3
- Pediatrician . . . . . 4
- Other physician. . . . . 5
- please specify type(s): \_\_\_\_\_
- Nurse practitioner or physician's assistant. . . . . 6
- Registered nurse . . . . . 7
- Other. . . . . 8
- please specify: \_\_\_\_\_

28. If an established patient calls complaining of an acute medical problem, such as a fever of 101 degrees and a cough, would this patient be given an appointment?

(Circle one)

Yes. . . . . 1--->go to 28a  
No . . . . . 2---->go to 29

28a. How soon would the appointment be scheduled?

(Circle one)

Same day. . . . . 1--->go to 28b  
Later day . . . . . 2---->go to 28c

## ORGANIZATION, continued

- 28b. Would the appointment be with the patient's personal physician or with any available provider?

(Circle one)

Personal physician. . . . . 1---->go to 29  
 Another provider. . . . . 2---->go to 28c

- 28c. Who would see the patient?

29. About how often do plan patients see their usual provider (i.e., the case manager or primary care provider) for primary (non-referral) care?

(Circle one)

Almost always (90-100%). . . . . 1  
 Most of the time (85-90%). . . . . 2  
 More than half the time (51-84%). . . . . 3  
 About half the time (45-50%). . . . . 4  
 Sometimes (25-44%). . . . . 5  
 Rarely (0-24%). . . . . 6

30. When a patient calls during regular office hours, how often does each of the following staff determine whether a patient has a medically urgent (needs to be seen within one hour), acute (needs to be seen within 24 hours), or routine problem?

	Usually	Rarely	Never
Telephone operator	_____	_____	_____
Secretary/clerk	_____	_____	_____
Nurse or NP/PA	_____	_____	_____
Case manager	_____	_____	_____
Other: _____	_____	_____	_____

31. If a patient calls after regular office hours, who handles the call?

ORGANIZATION, continued

32. Who usually sees patients with urgent medical problems (needs to be seen within one hour) during regular office hours?

(Circle one)

- Own case manager or primary care provider  
in plan facility. . . . . 1
  - Own case manager or primary care provider  
in hospital emergency room. . . . . 2
  - Another plan provider in plan facility . . . . . 3
  - Another plan provider in hospital emergency room . . 4
  - Emergency room provider in emergency room. . . . . 5
  - Other. . . . . 6
- Please specify: \_\_\_\_\_

33. How does the plan handle patients with acute (needs to be seen within 24 hours) problems?

(Circle one)

- Covered by emergency room. . . . . 1
  - Uses a walk-in clinic. . . . . 2
  - Uses same-day appointment slot . . . . . 3
  - Other. . . . . 4
- Please specify: \_\_\_\_\_

34. If the patient's regular provider is away, who sees the patient?

(Circle one)

- A designated back-up physician . . . . . 1
- A member of that physician's team. . . . . 2
- Any available plan physician . . . . . 3

REFERRALS

35. About what percent of your patients are referred to another physician within the plan by the primary care provider?

\_\_\_\_\_ percent

36. About what percent of your patients are referred to providers outside the plan?

\_\_\_\_\_ percent

## ORGANIZATION, continued

37. Does the plan make any attempt to identify patient self-referrals to plan physicians (i.e., to physicians other than their primary care provider)?

(Circle one)

Yes . . . . . 1---->go to 37a  
No . . . . . 2

- 37a. What does the plan do when patients self-refer to plan physicians?

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EFFECTIVE DATE FOR DATA PROVIDED: \_\_\_\_\_

NAME(S) AND TITLE(S) OF INDIVIDUAL(S) PROVIDING THIS INFORMATION:

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TO BE ATTACHED: Organization chart for PPMHC  
Organization chart for sponsoring organization

# PLAN DESIGN AND IMPLEMENTATION

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1. Which of the following functions are performed by the plan and which (if any) are contracted out?

(Circle one number on each line)

SERVICES	PLAN	CONTRACT
Total plan management.....	1	2
Benefit and rate development.....	1	2
Reimbursement to providers.....	1	2
Premium revenue collection.....	1	2
Accounting and billing.....	1	2
Market analysis.....	1	2
Promotion (advertising).....	1	2
Enrollment.....	1	2
Information and data processing.....	1	2
Housekeeping and maintenance.....	1	2

2. Does the plan have its own marketing/enrollment staff?

(Circle one)

Yes..... 1--->go to 3  
No..... 2--->go to 4

3. As of December 31, 1986, how many full-time equivalent (FTE) employees have responsibility for marketing and enrollment functions?

Enter number: \_\_\_\_\_

4. Has the plan used a marketing consultant?

(Circle one)

Yes..... 1  
No..... 2

## PLAN DESIGN, continued

5. Has the state Medicaid agency (or other authority) placed any restrictions on the plan's marketing efforts?

(Circle one)

Yes..... 1 --> Go to 5a  
No..... 2 --> Go to 6

- 5a. What restrictions have been placed on the plan's marketing efforts?

(Circle all that apply)

Advance review of marketing materials/procedures..... 1  
Direct solicitation prohibited..... 2  
Other .....3  
What?: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

6. What is the plan's marketing budget for the current fiscal year?

Enter dollar amount: \$ \_\_\_\_\_

7. In which of the following ways are plan benefits marketed?

(Circle all that apply)

Direct mail..... 1  
Door-to-door..... 2  
At local welfare office(s)..... 3  
At local income maintenance office..... 4  
At plan office site(s)..... 5  
At plan hospital site(s)..... 6  
In local newspapers..... 7  
On local radio/TV..... 8  
Advertising on buses/subways..... 9  
Small-group discussions.....10  
Word of mouth.....11  
Other.....12  
What?: \_\_\_\_\_

## PLAN DESIGN, continued

8. How would you rate the success of the plan's marketing strategy?

(Circle one)

Very successful..... 1  
 Somewhat successful..... 2  
 Not very successful..... 3  
 Not at all successful..... 4

9. What major problems has the plan's marketing effort encountered?

(Circle all that apply)

Comprehensiveness of FFS Medicaid benefits..... 1  
 Eligibles unwilling to give up Medicaid card..... 2  
 Eligibles want to retain freedom of choice..... 3  
 Language barriers..... 4  
 Transportation to plan sites difficult..... 5  
 Other..... 6

What?: \_\_\_\_\_

10. Where does enrollment take place?

(Circle all that apply)

Plan's administrative offices..... 1  
 Plan's clinic sites..... 2  
 Plan's hospital sites..... 3  
 Local public assistance/welfare office..... 4  
 Local income maintenance office..... 5  
 Other..... 6

Where?: \_\_\_\_\_

11. Do you enroll current clinic users of your sponsoring organization into the plan?

(Circle one)

Yes..... 1 --> Go to 11a  
 No..... 2 --> Go to 12

- 11a. At which clinics does this take place?

Write in clinic name(s): \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## PLAN DESIGN, continued

12. What percentage of new enrollees enroll at each of the following marketing locations? (If your plan does not market at a given location, enter '00'.)

Write in percentages:

Plan service location(s)	_____
Income maintenance centers	_____
Public assistance offices	_____
Door-to-door	_____
Other marketing	_____

13. How are the plan's marketing staff paid?

(Circle one)

Salary only.....	1
Salary plus bonus per enrollment.....	2
Other.....	3
Please describe: _____	
_____	

14. Is the marketing staff expected to meet certain enrollment quotas?

(Circle one)

Yes.....	1 --> Go to 14a
No.....	2 --> Go to 15

- 14a. Please describe briefly the quotas used:

\_\_\_\_\_  
 \_\_\_\_\_ --->go to 14b  
 \_\_\_\_\_  
 \_\_\_\_\_

- 14b. Are enrollers paid a bonus for exceeding their quotas?

(Circle one)

Yes.....	1
No.....	2

## PLAN DESIGN, continued

15. Has the plan requested any Federal waivers?

(Circle one)

Yes..... 1 --> Go to 16

No..... 2 --> Go to 19

16. In the table provided below, please indicate the dates that Federal waivers were requested and granted.

Waiver	Requested	Granted
Freedom of choice.....	_____	_____
Statewide operation.....	_____	_____
Comparability of benefits....	_____	_____
Guaranteed eligibility.....	_____	_____
Locality as central broker....	_____	_____
HMO population.....	_____	_____
Other.....	_____	_____

17. Did the plan (or its sponsor(s)) request assistance from the National Governor's Association in preparing the waiver applications?

(Circle one)

Yes..... 1

No..... 2

18. What problems, if any, were experienced in obtaining these waivers?

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## PLAN DESIGN, continued

## BENEFIT DESIGN

19. Which of the following Medicaid benefits are covered by the plan's capitation rate? (If you prefer, you may attach a brochure describing the plan's Medicaid benefits.)

(Circle all that apply)

Physician services.....	1
Inpatient hospital services.....	2
Outpatient hospital services.....	3
Diagnostic laboratory services.....	4
Therapeutic radiologic services.....	5
Medically necessary emergency care.....	6
Home health care.....	7
EPSDT services.....	8
Preventive medical care.....	9
Preventive dental care for children under 12.....	10
Dental care services other than above.....	11
Eye exams for children under 18.....	12
Vision care services other than above.....	13
Family planning services.....	14
Outpatient mental health services.....	15
Alcohol, drug abuse, and addiction treatment/referral....	16
Mental health services other than above.....	17
Intermediate and long-term medical care.....	18
Intermediate and long-term mental health care.....	19
Prescription drugs.....	20
Other.....	21

Please specify: \_\_\_\_\_  
 \_\_\_\_\_

## PLAN DESIGN, continued

20. Which of the following benefits are covered under fee-for-service Medicaid?

(Circle all that apply)

Physician services.....	1
Inpatient hospital services.....	2
Outpatient hospital services.....	3
Diagnostic laboratory services.....	4
Therapeutic radiologic services.....	5
Medically necessary emergency care.....	6
Home health care.....	7
EPSDT services.....	8
Preventive medical care.....	9
Preventive dental care for children under 12.....	10
Dental care services other than above.....	11
Eye exams for children under 18.....	12
Vision care services other than above.....	13
Family planning services.....	14
Outpatient mental health services.....	15
Alcohol, drug abuse, and addiction treatment/referral....	16
Mental health services other than above.....	17
Intermediate and long-term medical care.....	18
Intermediate and long-term mental health care.....	19
Prescription drugs.....	20
Other.....	21

Please specify: \_\_\_\_\_  
 \_\_\_\_\_

MANAGEMENT INFORMATION SYSTEM (MIS)
-------------------------------------

21. Did the plan adapt an existing MIS to your capitated population or was a new system developed?

Adapted existing system..... 1  
 Developed new system..... 2

## PLAN DESIGN, continued

22. Which of the following types of information does your MIS routinely provide on prepaid enrollees?

(Circle all that apply)

Number of new enrollees.....	1
Ambulatory visit counts, by reason for visit.....	2
Number of specialist referrals.....	3
Number of inpatient visits, by age and sex.....	4
Number of deaths (all causes).....	5
Number of deaths among infants (under 1 year).....	6
Number of deliveries.....	7
Number of live births.....	8
Number of caesarean sections.....	9
Number of maternal deaths (incl. due to abortion).....	10
Number of complaints.....	11
Counts of complaints by reason.....	12
Number of disenrollments.....	13
Other.....	14

Please specify: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

23. Does the plan's MIS provide all the data needed for the plan to monitor utilization?

(Circle one)

Yes..... 1  
No..... 2

24. Does the state's MMIS provide you with data on prior utilization of your Medicaid eligibles?

(Circle one)

Yes..... 1  
No..... 2

25. Are you required to provide encounter data to the state Medicaid agency?

(Circle one)

Yes..... 1  
No..... 2

## PLAN DESIGN, continued

26. Please describe the basic features of the plan's MIS:

Hardware: \_\_\_\_\_

\_\_\_\_\_

Software: \_\_\_\_\_

\_\_\_\_\_

PLAN MONITORING AND EVALUATION
--------------------------------

27. In what areas would you like the state Medicaid agency to provide assistance?

(Circle all that apply)

- Fewer restrictions on plan's marketing practices . . . 1
- Provide more assistance in marketing . . . . . 2
- Streamline the enrollment process. . . . . 3
- Speed up the enrollment process. . . . . 4
- Speed up the disenrollment process . . . . . 5
- Reduce/eliminate certain reporting requirements. . . 6
- Assist in quality assurance monitoring . . . . . 7
- Provide technical assistance . . . . . 8-->go to 27a
- Other. . . . . 9

Please specify: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

27a. If you think technical assistance would be helpful, please indicate in what area(s) your plan could make use of such assistance from the state Medicaid agency.

\_\_\_\_\_

\_\_\_\_\_

28. Which of the following describe(s) the relationship between the plan and the state Medicaid agency?

(Circle all that apply)

- State agency has assigned a staff person to plan . . . 1
- State agency and plan staff meet regularly . . . . . 2
- Plan submits regular reports to state agency . . . . . 3
- Medicaid staff attend plan board meetings. . . . . 4
- Other. . . . . 5

Please specify: \_\_\_\_\_

## PLAN DESIGN, continued

29. Please indicate which of the following are the most important attributes of your plan. (To rank, place a "1" beside the most important, a "2" beside the second most important, and a "3" beside the third most important.) Please rank no more than three attributes.

☐ comprehensiveness of benefits  
☐ marketing capability  
☐ ability to recruit and retain qualified providers  
☐ efficient enrollment process  
☐ convenient access to services  
☐ personable employees  
☐ reliable management information system  
☐ strong financial control  
☐ effective risk sharing mechanisms  
☐ ability to control utilization appropriately  
☐ competitive rate schedule

30. In your view, what is the least effective dimension of the PPMHC and why is this so?

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UTILIZATION REVIEW
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31. Which of the following services are monitored to assess appropriate utilization?

(Circle one)

Inpatient stays. . . . . 1  
 Outpatient visits. . . . . 2  
 Specialist referrals . . . . . 3  
 Pathology. . . . . 4  
 X-ray. . . . . 5  
 Pharmacy . . . . . 6  
 Other. . . . . 7

What: \_\_\_\_\_

## PLAN DESIGN, continued

32. How does the plan monitor average length of stay (LOS)?

(Circle one)

Preadmission review for all diagnoses. . . . 1  
 Concurrent review for all diagnoses. . . . 2  
 Preadmission review for selected diagnoses . 3  
 Concurrent review for selected diagnoses . . 4  
 Other mechanism. . . . . 5

What: \_\_\_\_\_  
 \_\_\_\_\_

33. Do you create physician-specific utilization profiles?

(Circle one)

Yes. . . . . 1---->go to 33a  
 No . . . . . 2---->go to 34

33a. Are these profiles used to monitor physician practice patterns?

(Circle one)

Yes. . . . . 1  
 No . . . . . 2

34. Does the plan employ sanctions against physicians who exceed plan standards for use of services, referrals, and hospitalizations?

(Circle one)

Yes. . . . . 1  
 No . . . . . 2

35. Does the plan monitor insufficient/inadequate care as well as excessive care?

(Circle one)

Yes . . . . . 1---->go to 35a  
 No . . . . . 2---->go to 36

35a. How is insufficient or inadequate care monitored?

\_\_\_\_\_  
 \_\_\_\_\_

## PLAN DESIGN, continued

36. How does the plan control the use of inpatient services, laboratory services, prescriptions, recall visits, and other outpatient services to the nonplan physicians to whom you refer your patients?

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37. What actions would the plan take if utilization of emergency room services, for example, had been twice what had been projected for a given period?

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38. How do current hospital admission rates for plan enrollees compare to hospitalization rates elsewhere in the area in which your plan is marketed?

(Circle one)

Much higher. . . . .	1
Somewhat higher. . . . .	2
About the same . . . . .	3
Somewhat lower . . . . .	4
Much lower . . . . .	5
Don't know . . . . .	6

39. How do current office visit rates for plan enrollees compare to office visit rates elsewhere in the area in which your plan is marketed?

(Circle one)

Much higher. . . . .	1
Somewhat higher. . . . .	2
About the same . . . . .	3
Somewhat lower . . . . .	4
Much lower . . . . .	5
Don't know . . . . .	6

## PLAN DESIGN, continued

40. Do plan providers see fee for service patients as well as prepaid plan enrollees?

(Circle one)

Yes . . . . . 1---->go to 40a  
No . . . . . 2---->go to 41

- 40a. How do the number of office visits per capita compare between plan enrollees and fee for service patients seen by the same provider(s)?

(Circle one)

Plan patients make more visits per capita . . . . 1->go to 40b  
Plan and fee for service patients make about  
the same number of visits . . . . . 2->go to 40b  
Plan patients make fewer visits per capita . . . 3->go to 40b

- 40b. Is there a way for the provider to distinguish between plan and FFS or other patients?

(Circle one)

Yes . . . . . 1---->go to 40c  
No . . . . . 2---->go to 40d

- 40c. If there is such a distinction, how is it made?

(Circle all that apply)

Distinctive patient chart markings . . . . . 1  
Determined by who signs patient's chart. . . . . 2  
Special log or list maintained by practice . . . . 3  
Access to computer system with identifying  
information. . . . . 4  
Providers see only prepaid or only FFS patients. . 5  
Other. . . . . 6  
Please specify: \_\_\_\_\_

## PLAN DESIGN, continued

- 40d. Which of the following distinguish plan patients from FFS patients or other patients?

(Circle all that apply)

- usage of plan patients monitored more closely  
 than that of other patients. . . . . 1  
 plan patients not referred as much as FFS patients . 2  
 plan patients more likely to use plan providers  
 for all care than are FFS or other patients. . . . 3  
 other. . . . . 4  
 Please specify: \_\_\_\_\_  
 none of the above. . . . . 5

41. Does the plan make any formal effort to educate Medicaid enrollees about what case management means and how to use plan services appropriately?

(Circle one)

- Yes. . . . . 1--->go to 41a  
 No . . . . . 2--->go to 42

- 41a. Please provide a brief description, including when educational efforts occur (e.g., at marketing contact) and whether these programs are offered to non-Medicaid enrollees.

\_\_\_\_\_->go to 41b  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

- 41b. Has the effectiveness of any of these efforts been systematically evaluated?

(Circle one)

- Yes. . . . . 1  
 No . . . . . 2

## PLAN DESIGN, continued

42. Please provide projected and actual annual average per capita utilization rates for the period January 1, 1986 through December 31, 1986. If you do not disaggregate data by age and/or sex, please enter the total projected and actual utilization figures in the appropriate slot.

## PROJECTED UTILIZATION RATES

## INPATIENT STAYS

Children (0 to 14 years) \_\_\_\_\_

Adult Males \_\_\_\_\_

Adult Females \_\_\_\_\_

TOTAL INPATIENT VISITS \_\_\_\_\_

## OUTPATIENT VISITS

Children (0 to 14 years) \_\_\_\_\_

Adult Males \_\_\_\_\_

Adult Females \_\_\_\_\_

TOTAL OUTPATIENT VISITS \_\_\_\_\_

## PROJECTED UTILIZATION RATES

## EMERGENCY ROOM VISITS

Children (0 to 14 years) \_\_\_\_\_

Adult Males \_\_\_\_\_

Adult Females \_\_\_\_\_

TOTAL EMERGENCY ROOM VISITS \_\_\_\_\_

## PLAN DESIGN, continued

## ACTUAL UTILIZATION RATES

## INPATIENT STAYS

Children (0 to 14 years)	_____
Adult Males	_____
Adult Females	_____
TOTAL INPATIENT STAYS	_____

## ACTUAL UTILIZATION RATES

## OUTPATIENT VISITS

Children (0 to 14 years)	_____
Adult Males	_____
Adult Females	_____
TOTAL OUTPATIENT VISITS	_____

## EMERGENCY ROOM VISITS

Children (0 to 14 years)	_____
Adult Males	_____
Adult Females	_____
TOTAL EMERGENCY ROOM VISITS	_____

45. How many deliveries were projected for plan enrollees during the period January 1, 1986 through December 31, 1986?

Enter number of deliveries projected \_\_\_\_\_

46. How many deliveries actually occurred during the period January 1, 1986 through December 31, 1986?

Enter actual number of deliveries \_\_\_\_\_

## PLAN DESIGN, continued

EFFECTIVE DATE FOR DATA PROVIDED (if other than requested dates):

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NAMES(S) AND TITLE(S) OF INDIVIDUAL(S) PROVIDING THIS INFORMATION:

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TO BE ATTACHED: Benefits design brochure (optional)

ENROLLEES/PATIENTS

ENROLLMENT

1. Please provide enrollment information in the following table.  
If you do not plan to enroll a particular subpopulation, please enter a zero (0) in the appropriate columns.

	Enrolled as of 1/1/86	Current Enrollment	Projected Enrollment for 7/1/87	Projected Enrollment for 1/1/88
AFDC	_____	_____	_____	_____
SSI	_____	_____	_____	_____
Medically Needy	_____	_____	_____	_____
Medicare	_____	_____	_____	_____
Employee Groups	_____	_____	_____	_____
Other _____	_____	_____	_____	_____

2. Are there screening guidelines used by the plan for accepting new patients?

(Circle one)

Yes. . . . .1---->go to 2a  
No . . . . .2---->go to 3

- 2a. If a formal or informal screening system exists, which criteria are used to select plan patients?

(Circle all that apply)

Distance of residence from practice . . . . . 1  
Age . . . . . 2  
Seriousness of health problem . . . . . 3  
English language ability. . . . . 4  
Disease/medical condition . . . . . 5  
Ability to pay. . . . . 6  
Member of practice patient's family . . . . . 7  
Referrals by community physicians . . . . . 8  
Psychological problems. . . . . 9  
Other \_\_\_\_\_ . . . . .10

3. Do you encourage people who have existing provider relationships to join your plan?

(Circle one)

Yes. . . . .1  
No . . . . .2

## ENROLLEES, continued

4. Are there any categories or types of enrollees you discourage from joining your plan?

(Circle one)

Yes . . . . .1--->go to 4a  
No . . . . .2--->go to 5

- 4a. If so, what are these categories and your reasons?

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5. Can individual family members enroll/disenroll separately or must these transactions occur only at the family level?

(Circle one)

May enroll/disenroll individually . . . . .1  
May enroll/disenroll only at family level . . . . .2

6. Are enrollees "locked in" to the plan for any length of time?

(Circle one)

Yes. . . . .1--->go to 6a  
No . . . . .1--->go to 7

- 6a. If so, what is the "lock-in" period?

(Circle one)

30 days . . . . .1  
60 days . . . . .2  
90 days . . . . .3  
Other (please specify: ) . . . . 4

7. Do you have a process that routinely obtains sociodemographic information on your enrollees?

(Circle one)

Yes. . . . .1--->go to 7a  
No . . . . .2--->go to 8

- 7a. If so, what are the findings? (Summarize here or attach copy)

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## ENROLLEES, continued

8. How does your current enrollment compare with projections you made in your original RWJ grant application?

	About Same	Higher	Lower
AFDC	_____	_____	_____
SSI	_____	_____	_____
medically needy	_____	_____	_____
Medicare	_____	_____	_____
employee groups	_____	_____	_____
other _____	_____	_____	_____

## COMPLAINTS/GRIEVANCES

9. What is the average number of complaints/grievances filed on a monthly basis?

\_\_\_\_\_ average no. complaints per month

10. What percent of the grievances are resolved, on average, within a month?

Please enter percent \_\_\_\_\_

## ENROLLEES, continued

11. What are the three most frequent reasons offered as the basis for complaint?

(Please rank your responses, with "1" being the most frequent complaint, "2" being the second most frequent complaint, and so forth.)

\_\_\_ dislike primary care provider  
\_\_\_ unable to see preferred provider  
\_\_\_ unable to access any provider  
\_\_\_ waiting time  
\_\_\_ service location inconvenient  
\_\_\_ insufficient time with provider  
\_\_\_ too long to wait to obtain appointment  
\_\_\_ quality of medical care received  
\_\_\_ scheduling of appointments  
\_\_\_ benefit package  
\_\_\_ attitudes of nonphysician personnel  
\_\_\_ business office errors  
\_\_\_ communications problems  
\_\_\_ problems with out of plan care  
\_\_\_ problems with after hours coverage  
\_\_\_ transportation  
\_\_\_ difficulty in making appointments  
\_\_\_ hours inconvenient  
\_\_\_ specific service not offered  
\_\_\_ eligibility or identification  
\_\_\_ wants fee for service card/stickers  
\_\_\_ marketing pressure  
\_\_\_ wants own doctor  
\_\_\_ marketing misrepresentation  
\_\_\_ language  
\_\_\_ other\_\_\_\_\_

## ENROLLEES, continued

12. Does the plan maintain a log of patient complaints?

(Circle one)

Yes . . . . . 1----&gt;go to 12a

No . . . . . 2----&gt;go to 13

12a. Who reviews it? \_\_\_\_\_

13. What is the resolution process for the grievance?

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DISENROLLMENT
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14. When is a Medicaid enrollee eligible to disenroll?

(Circle one)

After 30 days . . . . . 1

At any time . . . . . 2

Only after lock-in expires. . . . . 3

Other . . . . . 4

please specify: \_\_\_\_\_

15. What is the time period between the enrollee's decision to disenroll and the return of the Medicaid fee-for-service card to the enrollee?

---

16. Have there been any problems with the patient's return to the Medicaid fee for service system?

(Circle one)

No . . . . . 1

Yes . . . . . 2----&gt;go to 16a

16a. If so, please describe them \_\_\_\_\_

---

ENROLLEES, continued

17. Are disenrollment data required by the state?

(Circle one)

Yes. . . . .1---->go to 17a  
No . . . . .2---->go to 18

17a. If so, at what frequency and in what detail?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

18. What is the average number of both voluntary and involuntary disenrollments, on a monthly basis, for the following groups:

	Voluntary	Involuntary
AFDC	_____	_____
SSI	_____	_____
Medicare	_____	_____
medically needy	_____	_____
employee groups	_____	_____
other_____	_____	_____

19. What percent of disenrollments are due to the following reasons:

(Please provide percent)

- \_\_\_dissatisfied with primary care provider
- \_\_\_too long a wait for services
- \_\_\_unable to obtain care
- \_\_\_moved out of service area
- \_\_\_death
- \_\_\_other\_\_\_\_\_

20. Does the plan's contract with the state Medicaid program permit the plan to disenroll patients for cause?

(Circle one)

Yes. . . . .1---->go to 20a  
No . . . . .2

20a. What constitutes cause?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## ENROLLEES, continued

EFFECTIVE DATE FOR DATA PROVIDED: \_\_\_\_\_

NAME(S) AND TITLE(S) OF INDIVIDUAL(S) PROVIDING THIS INFORMATION:

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TO BE ATTACHED: Findings from analyses of sociodemographic data on  
enrollees

## P P M H C

## CASE STUDY OF CAPITATION AND CASE MANAGEMENT

FINANCIAL MANAGEMENT MODULE  
to be completed by  
Plan's Financial Officer

March 1, 1987

INSTRUCTIONS: Your answers to this questionnaire will provide background information for our case study of \_\_\_\_\_. The term FFS means fee-for-service.

- Where figures are requested, we ask that these be current figures as of December 31, 1986; if figures as of that date are not available, please enter the most current figures, and indicate at the end of the survey the effective date.
- Choices have been provided to facilitate your response. If none of the offered choices fits, write in responses that provide a more accurate answer for your PPMHC.
- If you need additional space in which to answer a question, please write on the reverse of the sheet or attach an additional sheet with the question number and the continuation of your response.

When you have completed this questionnaire, please return it to RAND in the enclosed stamped, self-addressed envelope. If you have any questions or need assistance in completing this questionnaire, please call Phoebe A. Lindsey at (213) 393-0411, ext. 7606.

REVENUES AND EXPENSES
-----------------------

1. On what date did the PPMHC begin to operate under contract to the state?

initial contract date \_\_\_\_\_  
 contract renewal date(s) \_\_\_\_\_

2. Do plan revenues currently equal or exceed expenditures?

(Circle one)

Yes . . . . . 1--->go to 3  
 No . . . . . 2--->go to 2a

- 2a. If not, when do you project that revenues will equal or exceed expenditures?

\_\_\_\_\_ ---->go to 3

3. If plan expenses exceed revenues, who will be responsible for making up the difference?

\_\_\_\_\_

4. Does your sponsoring institution provide financial assistance to the plan, either by paying physicians' salaries or by absorbing any losses that are incurred?

(Circle one)

Yes . . . . . 1--->go to 4a  
 No . . . . . 2--->go to 5

- 4a. If so, how long will these arrangements continue?

\_\_\_\_\_

5. How is the excess above expenditures allocated/distributed?

\_\_\_\_\_  
 \_\_\_\_\_

RATE SETTING

6. Do you have different monthly capitation rates for the various subpopulations (AFDC, SSI, Medicare, etc.) that you serve?

(Circle one)

Yes. . . . . 1---->go to 6a  
 No . . . . . 2---->go to 8

6a. Do these capitation rates vary by age category?

(Circle one)

Yes. . . . . 1---->go to 6b  
 No . . . . . 2---->go to 7

6b. What are your monthly capitations, by age category within subpopulation group?

	Monthly per capita Rate				
	AGE				
	0-5	6-14	15-44	45-65	>65
AFDC					
mothers		_____	_____	_____	
children		_____	_____	_____	
SSI	_____	_____	_____	_____	_____
Medicare	_____	_____	_____	_____	_____
Employee groups	_____	_____	_____	_____	_____
Other _____	_____	_____	_____	_____	_____
TOTALS	_____	_____	_____	_____	_____

7. If your monthly capitation rates differ for various subpopulations on some basis other than age, please describe and provide the rates.

Basis for differentiation: \_\_\_\_\_

AFDC	_____
SSI	_____
Medicare	_____
Employee groups	_____
Other	_____

RISK SHARING

8. Do individual primary care physicians receive a part of the capitation payment?

(Circle one)

Yes. . . . . 1  
 No . . . . . 2

9. Do individual specialists receive a part of the capitation payment?

(Circle one)

Yes. . . . . 1  
No . . . . . 2

10. Does your plan use salaried physicians?

(Circle one)

Yes. . . . . 1--->go to 11  
No . . . . . 2--->go to 12

11. What percent of the capitation is used to support salaried physicians?

\_\_\_\_\_ percent

12. How is the capitation payment allocated, by percent, among these categories?

Percent of Capitation Received

individual physician/case manager	_____
referral specialists	_____
physician groups/associations	_____
outpatient clinics	_____
hospitals	_____
PPMHC plan	_____
Administration	_____
performance incentive	_____
contingency	_____
reserve fund (specify type) _____	_____
others _____	_____

13. Which of the following types of expenses do you include in your administrative costs?

(Circle all that apply)

personnel . . . . .	1
general expenses (equip. rental, depreciation, consultants, travel legal fees, etc.) . . . . .	2
community service (research, education, other community involvement). . . . .	3
administrative reserves . . . . .	4
marketing . . . . .	5
debt service costs. . . . .	6
costs of in area emergency care . . . . .	7
other administrative costs (please specify) _____	8

14. After your RWJ grant support terminates, how will you cover the administrative and marketing expenses of the PPMHC?

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15. Which of the following have funds set aside to cover cost overruns and what amount (\$ or %) is withheld? (If a category has no set asides, enter a zero.)

Amount Withheld (\$ or %)

individual physician/case manager	_____
referral specialist	_____
physician groups/associations	_____
outpatient clinics	_____
hospitals	_____
other _____	_____

16. Do you have stop loss coverage (insurance for claims over a certain threshold amount) for the AFDC population?

(Circle one)

Yes. . . . . 1---->go to 16a  
No . . . . . 2---->go to 17

- 16a. Who provides the stop loss coverage?

(Circle one)

state/county. . . . . 1---->go to 16b  
plan sponsor . . . . . 2---->go to 16b  
insurance company . . . . . 3---->go to 16b  
other . . . . . 4---->go to 16b  
please specify: \_\_\_\_\_

- 16b. At what dollar amount does the stop loss kick in?  
\$ \_\_\_\_\_

PROVIDER PAYMENT
------------------

17. How are the major participating hospitals paid by the PPMHC?  
[Major hospitals mean those that serve as plan sponsors, those owned by the plan or those to which the plan sends a significant proportion of its enrollees on a regular basis.]

(Circle one)

Per diem negotiated by plan. . . . .	1
Charges. . . . .	2
Costs. . . . .	3
Medicaid Rates by Line Item. . . . .	4
Per Diagnosis or DRG . . . . .	5
Part of the Capitation . . . . .	6

18. How are other participating hospitals paid by the plan?

(Circle one)

Per diem negotiated by plan. . . . .	1
Charges. . . . .	2
Costs. . . . .	3
Medicaid rates by line item. . . . .	4
Per diagnosis or DRG . . . . .	5
Part of the capitation . . . . .	6

19. Do you have a discounted rate with the hospitals you use?

(Circle one)

Yes. . . . .	1----	go to 19a
No . . . . .	2----	go to 20

- 19a. If so, how does this rate compare with the rate that the state Medicaid agency has negotiated for its fee for service Medicaid patients?

(Circle one)

PPMHC negotiated rate same as	
Medicaid FFS negotiated rate. . . .	1---->go to 19b
PPMHC negotiated rate lower than	
Medicaid FFS negotiated rate. . . .	2---->go to 19b
PPMHC negotiated rate higher than	
Medicaid FFS negotiated rate. . . .	3---->go to 19b
State Medicaid does not have	
negotiated rate for FFS patients. . .	4---->go to 19b

- 19b. What is this special rate?

\$\_\_\_\_\_per\_\_\_\_\_ ---->go to 21

20. If you pay hospitals on a per diem basis, what is that rate of payment for the current fiscal year?

\$ \_\_\_\_\_

21. What factors do you believe influence the hospitalization rate at your PPMHC?

(Circle all that apply)

amount of capitation withheld for incentives. . . . . 1  
 physician education programs. . . . . 2  
 concurrent utilization review . . . . . 3  
 type of physician hired by plan . . . . . 4  
 other (please specify) \_\_\_\_\_ . . . . 5

22. What percentage of PPMHC primary care physicians are paid on:

(Please provide percent)

\_\_\_\_\_ salary basis  
 \_\_\_\_\_ capitation basis  
 \_\_\_\_\_ fee for service  
 \_\_\_\_\_ some other basis (please specify) \_\_\_\_\_

23. What percentage of PPMHC specialists are paid on:

(Please provide percent)

\_\_\_\_\_ salary basis  
 \_\_\_\_\_ capitation basis  
 \_\_\_\_\_ fee for service  
 \_\_\_\_\_ some other basis (please specify) \_\_\_\_\_

24. Which of the following are taken into account in determining levels of payment to individual physicians?

(Circle all that apply)

productivity. . . . . 1  
 qualifications and training . . . . . 2  
 experience. . . . . 3  
 research. . . . . 4  
 risk sharing tied to hospitalization. . . . . 5  
 nonhospital incentives. . . . . 6  
 other . . . . . 7  
 please specify \_\_\_\_\_  
 none . . . . . 8

25. How do you pay for routine lab work for enrollees?

(Circle one)

on a capitation basis. . . . . 1  
 on fee for service basis . . . . . 2  
 other. . . . . 3  
 please specify \_\_\_\_\_

PLAN MONITORING AND EVALUATION
--------------------------------

26. In your view, what are the three most important attributes of your plan? (To rank, place a "1" beside the most important, a "2" beside the second most important, and a "3" beside the third most important.) Please rank no more than three attributes.

\_\_\_comprehensiveness of benefits  
 \_\_\_marketing capability  
 \_\_\_ability to recruit and retain qualified providers  
 \_\_\_efficient enrollment process  
 \_\_\_convenient access to services  
 \_\_\_personable employees  
 \_\_\_reliable management information system  
 \_\_\_strong financial control  
 \_\_\_effective risk sharing mechanism  
 \_\_\_ability to control utilization appropriately  
 \_\_\_competitive rate schedule

27. In your view, what is the least effective dimension of your plan and why is this so?

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

EFFECTIVE DATE FOR DATA PROVIDED: \_\_\_\_\_

NAME(S) AND TITLE(S) OF INDIVIDUAL(S) PROVIDING THIS INFORMATION:

\_\_\_\_\_  
 \_\_\_\_\_

## P P M H C

## CASE STUDY OF CAPITATION AND CASE MANAGEMENT

MODULES:  
PROVIDER STRUCTURE  
CASE MANAGEMENT, QUALITY ASSURANCE  
AND ASSESSMENT

to be completed by  
Plan's Medical Director

March 1, 1987

INSTRUCTIONS: Your answers to this questionnaire will provide background information for our case study of \_\_\_\_\_.

- The terms "primary care provider" and "case manager" are used interchangeably in these questions.
- Where figures are requested, we ask that these be current as of December 31, 1986; if figures as of that date are not available, please enter the most current figures and indicate at the end of the survey the effective date.
- If you need additional space in which to answer a question, please write on the reverse of the sheet or attach another sheet with the question number and the continuation of your response.
- Choices have been provided to facilitate your response. If none of the offered choices fits, write in responses that provide a more accurate answer for your PPMHC.
- Question 11 of the PROVIDER STRUCTURE module requests that you attach copies of any provider satisfaction surveys you may have conducted and the results from these surveys.
- Question 8 of the CASE MANAGEMENT module requests copies of any patient satisfaction surveys you may have conducted as well as any results from these surveys.

When you have completed this questionnaire, please return it to RAND in the enclosed stamped, self-addressed envelope. If you have any questions or need assistance in completing the questionnaire, please call Phoebe A. Lindsey at (213) 393-0411, ext. 7606.

# PROVIDER STRUCTURE

## PRIMARY CARE PROVIDERS

1. Of the physicians affiliated with the plan, please indicate how many are:

(Please circle correct categories and provide number of physicians in each category.)

	Number
Employees of the sponsoring entity . . . . .	1
Employees of the plan. . . . .	2
Members of the only multispecialty group under contract to the plan . . . . .	3
Drawn from several multispecialty groups under contract to the plan . . . . .	4
Solo practitioners in the community that were members of an IPA contracting with the plan. . . . .	5
Solo practitioners in the community that contracted individually with the plan . . . . .	6
Other (please describe) _____	7

2. Which types of physicians are considered primary care case managers by your plan?

(Circle all that apply)

General practitioners. . . . .	1
Family practitioners . . . . .	2
Internal medicine . . . . .	3
Pediatricians. . . . .	4
Other _____	5

3. Do housestaff ever serve as primary care physicians in your plan?

(Circle one)

Yes. . . . .	1
No . . . . .	2

## PROVIDER STRUCTURE, continued

4. Please provide the following information on the primary care providers who are paid a salary by your plan.

Type of Primary Care Provider	Number
General practitioner	_____
Family practitioner	_____
Internal medicine	_____
Pediatrician	_____
Other _____	_____
Other Physician Characteristics	
Foreign Medical Graduate	_____
Resident or Intern	_____
Board Eligible	_____
Board Certified	_____
Full Time	_____

5. Please provide the following information on the primary care providers with whom you contract to provide services to the plan.

Type of Primary Care Provider	Number
General practitioner	_____
Family practitioner	_____
Internal medicine	_____
Pediatrician	_____
Other _____	_____
Other Physician Characteristics	
Foreign Medical Graduate	_____
Resident or Intern	_____
Board Eligible	_____
Board Certified	_____
Full Time	_____

6. Are the physicians and nurse practitioners/physician assistants organized into teams at your PPMHC (i.e., do the NP/PAs see patients on their own, subject to the supervision of a physician)?

(Circle one)

Yes. . . . . 1  
No . . . . . 2

## PROVIDER STRUCTURE, continued

## PHYSICIAN RECRUITMENT

7. Is there any screening of physicians who wish to participate in the plan?

(Circle all that apply)

Physicians are required to meet standards established by the PPMHC. . . . .	1
Physicians must be members of the county or state medical society . . . . .	2
Physicians are placed in a probationary period prior to becoming permanent associates of the PPMHC . . . . .	3
Primary care providers are required to be board eligible. . . . .	4
Specialists are required to be board eligible . . . . .	5
Primary care providers are required to be board eligible and become board certified after a specified period. . . . .	6
Specialists are required to be board eligible and become board certified after a specified period. . . . .	7
Primary care providers are required to be board certified . . . . .	8
All specialists are required to be board certified. . . . .	9
Other _____ . . . . .	10

8. What efforts are made to hire bilingual providers?

(Circle one)

Efforts to hire bilingual providers include _____ . . . . .	1
There are no efforts to hire bilingual providers . . . . .	2
Bilingual providers not needed in this area. . . . .	3
efforts to hire include _____ . . . . .	2

## PHYSICIAN WORKLOAD/CASELOAD

9. How many patients constitute a full load for the primary care physician?

\_\_\_\_\_

10. Can the PPMHC physician refuse to accept new patients?

(Circle one)

Yes. . . . .	1
No . . . . .	2

## PROVIDER STRUCTURE, continued

## CONTINUING MEDICAL EDUCATION

11. What types of educational programs or activities has the PPMHC sponsored for its primary care and specialty physicians on case management and on the concepts of capitation?

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## PHYSICIAN SATISFACTION

12. Have any surveys been done to assess provider satisfaction?

(Circle one)

Yes . . . . . 1--->go to 12a  
No . . . . . 2

- 12a. Please enclose a copy of the survey instrument and any results you have available.

EFFECTIVE DATE FOR DATA PROVIDED: \_\_\_\_\_

NAME(S) AND TITLE(S) OF INDIVIDUAL(S) COMPLETING THIS MODULE:

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TO BE ATTACHED: Provider satisfaction surveys and results

CASE MANAGEMENT AND QUALITY ASSESSMENT AND ASSURANCE

CASE MANAGEMENT

1. Please indicate which of the following functions are part of your plan's case-management strategy.

(Circle all that apply)

Deciding when a patient needs to be seen by a health care professional.....	1
Reminding patient about routine scheduled care.....	2
Referring patient to specialist.....	3
Referring patient to non-specialty health care services not provided at the plan.....	4
Providing referrals to non-health care services (e.g., food stamps, legal assistance, counseling, transportation)...	5
Hospitalizing patient.....	6
LOS review (prior and/or concurrent).....	7
Coordinating post-hospital care.....	8
Other.....	9
Please specify: _____	
_____	
_____	
_____	

2. Which of the following individuals act as primary providers/ case managers in your plan?

(Circle all that apply)

General practitioner.....	1
Family practitioner.....	2
Internist.....	3
Pediatrician.....	4
Other physician.....	5
Please specify type(s): _____	
Nurse practitioner or physician's assistant.....	6
Registered nurse.....	7
Other.....	8
Please specify: _____	

## CASE MANAGEMENT, continued

3. How many full-time equivalent (FTE) case managers of the following types are paid on a salary basis by your plan?

Type	No. of FTEs
General practitioner	_____
Family practitioner	_____
Internist	_____
Pediatrician	_____
Other physician (indicate types)	_____
_____	_____
_____	_____
_____	_____
Nurse practitioner/PA	_____
Registered nurse	_____
Other (indicate types)	_____
_____	_____
_____	_____
_____	_____

4. With how many full-time equivalent (FTE) case managers of the following types do you contract to provide services to the plan?

Type	No. of FTEs
General practitioner	_____
Family practitioner	_____
Internist	_____
Pediatrician	_____
Other physician (indicate types)	_____
_____	_____
_____	_____
_____	_____
Nurse Practitioner/PA	_____
Registered nurse	_____
Other (indicate types)	_____
_____	_____
_____	_____

QUALITY ASSESSMENT AND ASSURANCE
----------------------------------

5. What person, department, or committee has primary responsibility for quality assurance activities?

\_\_\_\_\_

## CASE MANAGEMENT, continued

6. What mechanisms are used to evaluate the quality of the process of medical care (i.e., diagnosis and treatment)?

(Circle all that apply)

Chart audit using explicit criteria ..... 1  
 Chart audit using implicit criteria ..... 2  
 Patient surveys ..... 3  
 Other ..... 4

Please describe: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Plan does not do process of care studies..... 5

7. What mechanisms are used to evaluate the outcomes of medical care?

(Circle all that apply)

Chart audit using explicit criteria ..... 1  
 Chart audit using implicit criteria ..... 2  
 Patient compliance surveys..... 3  
 Patient health status surveys..... 4  
 Other ..... 5

Please describe: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Plan does not do outcome studies..... 6

8. Does the plan use patient satisfaction studies to evaluate quality of care?

(Circle one)

Yes..... 1 --> Go to 8a

No..... 2 --> Go to 9

- 8a. Please include copies of any patient satisfaction surveys used by the plan, as well as summaries of findings based on prior surveys.

## CASE MANAGEMENT, continued

9. Please list the topics covered by the plan's quality assessment program during the preceding 12-month period:

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10. Does the plan use formal feedback mechanisms to report results of the quality assurance activities?

(Circle one)

Yes..... 1 --> Go to 10a  
 No..... 2 --> Go to 11

- 10a. What type of feedback mechanisms are used?

(Circle all that apply)

Oral communication directly to physicians..... 1  
 Written communication directly to physicians..... 2  
 Summaries presented at physician meetings..... 3  
 Other ..... 4

Please describe: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

- 10b. Does feedback to the provider include both positive and negative results?

(Circle one)

Yes..... 1  
 No..... 2

11. Are follow-up reviews conducted to determine if deficiencies have been remedied?

(Circle one)

Yes..... 1  
 No..... 2

## CASE MANAGEMENT, continued

12. Have any malpractice suits been filed by plan enrollees against plan physicians or the organization since the PPMHC was organized?

(Circle one)

Yes..... 1 --> Go to 12a  
 No..... 2

- 12a. How many suits have been filed?

Enter number of suits: \_\_\_\_\_ -->go to 12b

- 12b. How were these suits resolved?

Number

\_\_\_\_\_ Suits dropped  
 \_\_\_\_\_ Suits settled  
 \_\_\_\_\_ Court ruled against PPMHC in these cases  
 \_\_\_\_\_ Court ruled for PPMHC in these cases  
 \_\_\_\_\_ Suits still in process

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EFFECTIVE DATE FOR DATA PROVIDED (if other than requested dates):

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NAME(S) AND TITLE(S) OF INDIVIDUAL(S) PROVIDING THIS INFORMATION:

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TO BE ATTACHED: Patient satisfaction surveys and findings

## P P M H C

## CASE STUDY OF CAPITATION AND CASE MANAGEMENT

MEDICAID MODULE  
to be completed by  
STATE MEDICAID PROGRAM

March 1, 1987

INSTRUCTIONS: Your answers to this questionnaire will provide background information for our case study of \_\_\_\_\_. Some questions pertain to your state's Medicaid fee-for-service policies and rates, and others to the prepaid plan(s) with which the Medicaid program contracts.

- When you see the phrase "the PPMHC", we are referring specifically to \_\_\_\_\_; the phrase "prepaid plan" refers to any and all prepaid plans with which the Medicaid program currently contracts for services.
- Where figures are requested, we ask that these be current as of December 31, 1986; if figures as of that date are not available, please enter the most current figures, and indicate at the end of the survey the effective date.
- Choices have been provided to facilitate your response. If none of the offered choices fits, write in responses that provide a more accurate answer for your Medicaid program.
- If you need additional space in which to answer a question, please write on the reverse of the sheet or attach another sheet with the question number and the continuation of your response.

When you have completed this questionnaire, please return it to RAND in the enclosed stamped, self-addressed envelope. If you have any questions or need assistance in completing this questionnaire, please call Phoebe A. Lindsey at (213) 393-0411, ext. 7606.

MEDICAID RESTRICTIONS/LIMITATIONS
-----------------------------------

1. Does the state impose limits on Medicaid benefits for inpatient hospitalizations?

(Circle one)

Yes, annual limits. . . . . 1--->go to 1a

Yes, limits apply over some period

other than a year . . . . . 2--->go to 1a

Please indicate period:\_\_\_\_\_

No. . . . . 3--->go to 2

- 1a. Inpatient benefits limited during period to:

(Check one and provide amount)

\_\_\_\_\_ hospital days

No. of days for limitation \_\_\_\_\_

\_\_\_\_\_ dollars

Dollar amount of limitation \_\_\_\_\_

2. Does your state impose limits on Medicaid benefits for outpatient visits?

(Circle one)

Yes, annual limits. . . . . 1--->go to 2a

Yes, limits apply over some other period

other than a year. . . . . 2--->go to 2a

Please indicate period:\_\_\_\_\_

No. . . . . 3--->go to 3

- 2a. Outpatient benefits limited during period to

(Check one and provide amount)

\_\_\_\_\_ outpatient visits

No. of visits for limitation \_\_\_\_\_

\_\_\_\_\_ dollars

Dollar amount of limitation \_\_\_\_\_

MEDICAID-FEE-FOR SERVICE RATES

3. Does the Medicaid program reimburse providers according to a fee schedule?

(Circle one)

Yes. . . . .1-->go to 3a  
No . . . . .2-->go to 3b

3a. For each of the following types of service, please indicate the amount that Medicaid will reimburse/pay:

- a. Physician's office visit: initial \$ \_\_\_\_\_  
followup \$ \_\_\_\_\_
- b. Health center (neighborhood,  
other health center) initial \$ \_\_\_\_\_  
followup \$ \_\_\_\_\_
- c. Hospital based outpatient  
clinic visit: initial \$ \_\_\_\_\_  
followup \$ \_\_\_\_\_
- d. Hospital emergency room visit \$ \_\_\_\_\_
- e. Hospital inpatient visit \$ \_\_\_\_\_

3b. If your Medicaid program does not reimburse providers according to a fee schedule, what payment mechanism do you use?

(Circle all that apply)

- Hospitals are paid on the basis of average statewide charges. . . . . 1  
Please indicate average statewide charge \_\_\_\_\_
- Hospitals are paid on the basis of average areawide charges. . . . . 2  
Please indicate average areawide charge \_\_\_\_\_
- Physicians are paid on the basis of average statewide charges. . . . . 3  
Please indicate average statewide charge \_\_\_\_\_
- Physicians are paid on the basis of average areawide charges. . . . . 4  
Please indicate average areawide charge \_\_\_\_\_
- Other. . . . . 5  
Please describe: \_\_\_\_\_

4. What percent of the usual fee-for-service physician's office visit fee does your state's Medicaid program cover?

\_\_\_\_\_ percent

MEDICAID PREPAID CONTRACTS
----------------------------

5. How many organizations, including the PPMHC, does the Medicaid program currently contract with to deliver services on a prepaid (or capitated) basis?

\_\_\_\_\_ (Enter number of contracts; if the PPMHC is the only plan, enter '1')

6. Approximately what percent of the state's Medicaid recipients are currently covered by prepaid contracts?

\_\_\_\_\_ percent

7. Are Medicaid beneficiaries in the area served by the PPMHC required to enroll in a prepaid plan?

(Circle one)

Yes, enrollment in a prepaid plan is mandatory. . . . . 1  
 No, Medicaid beneficiaries can choose prepaid OR  
 fee-for-service care. . . . . 2

8. Please list all the HMOs that serve the Medicaid eligibles in your state.

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

RATE SETTING
--------------

9. Which of the following statements best describe how the capitation rate paid by your state to the PPMHC was developed?

(Circle one)

PPMHC proposed rate and state accepted it. . . . . 1  
 Medicaid program established rate and notified PPMHC . . . 2  
 Rate was negotiated between PPMHC and Medicaid program . . 3  
 Other. . . . . 4  
 Please specify: \_\_\_\_\_

10. Which of the following statements best describes the PPMHC's current capitation rate? (If PPMHC holds only prepaid contract, please circle '1').

(Circle one)

Rate is unique to plan. . . . . 1  
 Rate is same as other plans in area (e.g., county). . . . 2  
 Rate is same as other plans in state. . . . . 3

11. Is the PPMHC's capitation rate based on benefits paid only to fee-for-service Medicaid beneficiaries, or on some combination of benefits paid to fee-for-service users and prepaid plan enrollees?

(Circle one)

Rate based on fee-for-service benefits only. . . . . 1  
 Rate based on mix of fee-for-service benefits and  
 prepaid plan premiums. . . . . 2

12. Does the PPMHC's capitation rate reflect statewide or areawide experience?

(Circle one)

Capitation rate based on statewide Medicaid experience. . . . 1  
 Capitation rate based on areawide (e.g., county) experience . 2  
 Other . . . . . 3  
 Please describe: \_\_\_\_\_

13. What percentage of the PPMHC capitation is intended to cover the following types of services?

Percent

\_\_\_\_\_ outpatient visits  
 \_\_\_\_\_ inpatient visits (per day or per stay)  
 \_\_\_\_\_ emergency visits

14. Is the capitation rate bundled or specific to each aid category?

(Circle one)

bundled . . . . . 1  
 specific to aid categories. . . . . 2

15. Was there any effort to eliminate catastrophic cases/outliers from the calculation?

(Circle one)

Yes . . . . . 1  
No . . . . . 2

16. Please indicate by checking the appropriate box if you have developed different rates by age groups and by sex for each of your subpopulations of enrollees:

AGE SEX

AFDC  
SSI  
Medically needy  
Other


17. Does your agreement with the PPMHC allow for a retroactive rate adjustment to adjust for the health status of the eligibles enrolled?

(Circle one)

Yes . . . . . 1--->go to 17a  
No . . . . . 2--->go to 18

17a. If so, how is this computed? \_\_\_\_\_

18. Is there a catastrophic cap on the plan?

(Circle one)

Yes . . . . . 1  
No . . . . . 2

19. How often is the rate renegotiated? \_\_\_\_\_

DISENROLLMENT

20. What is the usual length of time between an enrollee's decision to disenroll and the return of the enrollee's regular fee-for-service Medicaid card?

\_\_\_\_\_

PROJECT MONITORING
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21. Have you designated an agency staff person to serve as project officer or primary liaison to the PPMHC?

(Circle one)

Yes. . . . . 1  
No . . . . . 2

22. Have you established mechanisms for monitoring the quality of care received by plan patients?

(Circle one)

Yes. . . . . 1--->go to 22a  
No . . . . . 2--->go to 23

22a. If so, please describe these mechanisms. \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

23. What other aspects of the PPMHC do you monitor, and how often do you monitor these aspects?

\_\_\_\_\_  
\_\_\_\_\_

24. In your view, what are the three most important attributes of the PPMHC? (To rank, place a "1" beside the most important attribute, a "2" beside the second most important, and a "3" beside the third most important.) Please rank no more than three attributes.

\_\_\_comprehensiveness of benefits  
\_\_\_marketing capability  
\_\_\_ability to recruit and retain qualified providers  
\_\_\_efficient enrollment process  
\_\_\_convenient access to services  
\_\_\_personable employees  
\_\_\_reliable management information system  
\_\_\_strong financial control  
\_\_\_effective risk sharing mechanism  
\_\_\_ability to control utilization appropriately  
\_\_\_competitive rate schedule  
\_\_\_other, please specify\_\_\_\_\_

25. In your view, what is the least effective dimension of the PPMHC, and why is this so?

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EFFECTIVE DATE FOR RATES PROVIDED: 

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NAME(S) AND TITLE(S) OF INDIVIDUAL(S) PROVIDING THIS INFORMATION:

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# Appendix C

## INFORMED CONSENT FORMS

Version P

### MEDICAL CARE STUDY OF FAMILIES USING MEDICAID

#### 1.1 WHAT THIS STUDY IS ABOUT

This is a study of families who receive Medicaid. Its purpose is to study the health of these families and to find out what kind of medical care they use and how satisfied they are with their care. The Study is being done by the Rand Corporation, which is located in Santa Monica, California. It is being paid for by the Robert Wood Johnson Foundation and the Health Care Financing Administration, in the U.S. Department of Health and Human Services. It has the approval of the New York City, Human Resources Administration (HRA).

#### 2.1 WHO CAN TAKE PART IN THE STUDY

Only families qualified to receive Medicaid can take part in this Study. I agree to take part in this Study if I am still qualified for Medicaid and enrolled in Health Care Plus on [fill in date, usually the first of the following month]. I also agree that members of my family who are covered on my Medicaid card and enrolled in Health Care Plus on [fill in date, usually the first of the following month] will take part in the Study. A Study representative will contact me before that date to tell me whether we are enrolled in the Study.

#### 3.1 CHOOSING TO TAKE PART IN THE STUDY

I understand that I do not have to take part in the Study. My decision to take part is entirely up to me. Whether we take part or not will not affect our membership in Health Care Plus. If I decide not to take part in the Study, that will not change Medicaid eligibility for me or my family. I also understand that my family and I may refuse to answer any question that the Study asks us, and that we can stop taking part in the Study at any time.

#### 4.1 INFORMATION THAT I WILL PROVIDE

I understand that I am being asked to participate in the Study for two years. I also understand that a Study representative will stay in touch with me and my family during this two-year period by mail or telephone. We will be asked to provide the following kinds of information:

- a.) Health Questionnaire: Now, and every six months, I will be asked to fill out a questionnaire describing how I feel about my health and how satisfied I am with my medical care. I will also be asked to fill out a form for each of my participating children younger than 14 about their health and medical care. I understand that participating children 14 and older will fill out their own forms.

- b.) Use of Services: Now, and every two months, I will be asked to fill out a short form for me and each participating child younger than 14 about the medical care we used during the previous two months. I understand that participating children 14 and older will fill out their own forms.
- c.) I understand that my family will receive small cash payments when we complete Study questionnaires:

\$3.00 today when I complete the initial interview

\$5.00 every six months when we complete the  
Health Questionnaires and Use of Services form

\$3.00 every two months when we complete just the  
Use of Services forms

I also understand that these payments will not cause me or my family to lose our eligibility for Medicaid. When I report these cash payments to ADC, they will be treated as income.

#### 5.1 INFORMATION OTHERS WILL PROVIDE

I understand that New York's Medicaid program and Health Care Plus have agreed to provide the Study with information about how my family and I have used Medicaid services, and how we use them during the next two years.

#### 6.1 WHO WILL USE THIS INFORMATION

I understand that the information my family and I give the Study, and the information that others give to the Study about us, will be kept absolutely private. It will not be given to our doctors or to the Medicaid program. When The Rand Corporation talks or writes about the Study, they will combine our answers with the answers from everyone else taking part in the Study. Any information that would permit identification of me or my family will be used only for Study purposes. It will not be released or given to anyone unless I agree or unless the law requires that the information be released.

#### 7.1 HOW TO GET MORE INFORMATION

If I have any questions about the Study, I can call the Study representative collect at [fill in phone of local Study representative], or I can call Chris Collins at The Rand Corporation collect at (213) 393-0411. I will be given a card that lists the names and telephone numbers of people to call if I have questions about the Study or need help filling out the forms.

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I have read and have had this information explained to me and I understand it. I voluntarily agree to participate in the Study under the conditions described here.

PLEASE PRINT YOUR NAME BELOW, AND THEN WRITE YOUR SIGNATURE.

Miss Ms.  
Mrs. Mr. \_\_\_\_\_  
First Name Middle Initial Last Name

YOUR SIGNATURE: \_\_\_\_\_

TODAY'S DATE: \_\_\_\_\_

The following members of my family will participate in the Study if they are eligible.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

8/06/86

## Versión P

## EL ESTUDIO SOBRE EL CUIDADO MEDICO DE FAMILIAS USANDO MEDICAID

## 1.1 DE QUE SE TRATA ESTE ESTUDIO

Este es un estudio de las familias las cuales actualmente reciben Medicaid. Su propósito es estudiar la salud de estas familias y averiguar la clase de cuidado médico que usan y que tan satisfechas están con ese cuidado. El estudio está hecho por la Corporación Rand, la cual está ubicada en Santa Mónica, California. El estudio está financiado por la Fundación Robert Wood Johnson y la Administración del Financiamiento del Cuidado de la Salud dentro del Departamento de Salud y Servicios Humanos de los Estados Unidos. Ha sido aprobado por la Ciudad de Nueva York, Administración de los Recursos Humanos.

## 2.1 QUIEN PUEDE PARTICIPAR EN EL ESTUDIO

Sólo las familias que tienen derecho de recibir Medicaid pueden participar en este estudio. Estoy de acuerdo en participar en este estudio si todavía tengo derecho a Medicaid y también estoy inscrito en Health Care Plus el día [fecha, usualmente el primer día del siguiente mes]. También estoy de acuerdo que los miembros de mi familia que están incluidos bajo mi tarjeta de Medicaid a inscritos en Health Care Plus el día [fecha, usualmente el primer día del siguiente mes] participarán en el estudio. Un representante del estudio me llamará antes de la fecha para decirme si estamos inscritos en el estudio.

## 3.1 LA DECISION DE PARTICIPAR EN EL ESTUDIO

Tengo entendido que no tengo que participar en el estudio. La decisión de participar o no es completamente a mi criterio. Si decidimos o no participar en el estudio, no afectará nuestra participación en Health Care Plus. Si decido no participar en el estudio, no cambiarán mis derechos ni los de mi familia a los beneficios de Medicaid. También tengo entendido que yo y mi familia podemos rehusar contestar cualquier pregunta en el estudio, y podemos dejar de participar en el estudio en cualquier momento.

## 4.1 INFORMACION QUE PROPORCIONARE

Tengo entendido que me piden participar en el estudio durante dos años. También tengo entendido que el representante del estudio se mantendrá en contacto conmigo y con mi familia durante este período de dos años por medio del correo o por teléfono. Nos pedirán proporcionar las siguientes clases de información:

- a) Cuestionario sobre la Salud: Ahora, y dos veces al año, me pedirán llenar un cuestionario describiendo cómo me siento de mi salud y que tan satisfecho estoy con mi cuidado médico. También me pedirán llenar una forma para cada uno de mis hijos

participantes de menos de 14 años de edad. Tengo entendido que los hijos participantes que tienen 14 años o más de edad llenarán sus propias formas.

- b) Uso de Servicios: Ahora, y cada tercer mes, me pedirán llenar un cuestionario corto por mi parte y por parte de cada hijo participante de menos de 14 años de edad acerca del cuidado médico que hemos usado durante los dos meses anteriores. Tengo entendido que los hijos participantes que tienen 14 años o más de edad llenarán sus propias formas.
- c) Tengo entendido que mi familia recibirá unos pagos pequeños cuando llenemos los cuestionarios del estudio:

\$3.00 hoy cuando termino la entrevista inicial

\$5.00 dos veces al año al llenar el Cuestionario sobre la Salud y la forma del Uso de Servicios

\$3.00 cada tercer mes al llenar sólo la forma del Uso de Servicios

También tengo entendido que estos pagos no afectarán mis derechos ni los de mi familia a los beneficios de Medicaid. Cuando les cuento a ADC de estos pagos en efectivo, los tomarán como ingresos.

#### 5.1 INFORMACION PROPORCIONADA POR OTRAS PERSONAS

Tengo entendido que el programa de Medicaid de Nueva York y Health Care Plus están de acuerdo en proporcionar información al estudio de cómo yo y mi familia hemos usados los servicios de Medicaid, y cómo los usamos durante los próximos dos años.

#### 6.1 QUIEN USARA ESTA INFORMACION

Tengo entendido que la información proporcionada por mí y por mi familia a este estudio, y la información acerca de nosotros proporcionada por otros, será estrictamente confidencial. No la proporcionará a nuestros doctores ni al programa de Medicaid. Cuando la Corporación Rand habla o escribe acerca del estudio, combinará nuestras respuestas con las de todas las personas participando en el estudio. Cualquier información que permitiera la identificación mía o de mi familia será usada sólo para los propósitos del estudio. No será divulgada a ninguna persona sin mi permiso anterior, al menos que se lo requiera por la ley.

#### 7.1 COMO CONSIGO MAS INFORMACION

Si tengo alguna pregunta acerca del estudio, puedo llamar por cobrar al representante del estudio al número [número telefónico del representante local del estudio], o puedo llamar por cobrar a Chris Collins de la Corporación Rand al número (213) 393-0411. Recibiré

una tarjeta con los nombres y números telefónicos donde puedo llamar si tengo alguna pregunta acerca del estudio o si necesito ayuda en llenar los cuestionarios.

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He leído y me ha explicado esta información, y lo entiendo. Por mi propia voluntad estoy de acuerdo en participar en el estudio bajo las condiciones descritas aquí.

FAVOR DE ESCRIBIR SU NOMBRE EN LETRAS DE MOLDE ABAJO, Y LUEGO SU FIRMA.

Srta. (Ms.)

Sra. Sr.

Primer Nombre

Segundo Nombre

Apellido Paternal

SU FIRMA

LA FECHA DE HOY

Los siguientes miembros de mi familia participarán en el estudio si son elegibles.

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8/6/86

## Version R

## MEDICAL CARE STUDY OF FAMILIES USING MEDICAID

## 1.1 WHAT THIS STUDY IS ABOUT

This is a study of families who receive Medicaid. Its purpose is to study the health of these families and to find out what kind of medical care they use and how satisfied they are with their care. The Study is looking at two ways of giving families medical care:

- o The usual way, in which families use their Medicaid card to get covered medical care from any doctor or hospital that accepts Medicaid; and
- o Prepaid health plans, in which families get all their covered Medicaid benefits from doctors and hospitals that belong to the plan.

The Study is being done by the Rand Corporation, which is located in Santa Monica, California. It is being paid for by the Robert Wood Johnson Foundation and the U.S. Department of Health and Human Services, Health Care Financing Administration. It has the approval of the New York City, Human Resources Administration (HRA).

## 2.1 WHO CAN TAKE PART IN THE STUDY

Only families qualified to receive ADC (Aid to Dependent Children) or ADC-related Medicaid can take part in this Study. To take part in this Study, I must still be qualified for Medicaid on [fill in date, usually the first of the following month]. Eligible members of my family who are covered on my Medicaid card on [fill in date, usually the first of the following month] may take part in the Study. A Study representative will contact me before that date to tell me whether we can take part in the Study.

## 3.1 HOW TAKING PART IN THE STUDY WILL AFFECT ME

I understand that if I take part in the Study, it will mean the following things:

- a) The Study may ask me and my family to change our medical care arrangements. The Study will give me and my family a 50-50 chance either of continuing to get medical care as we now do under Medicaid, or of becoming a Medicaid member of a prepaid health plan at Lutheran Medical Center called Health Care Plus.
- b) If the Study assigns me and my family to continue getting medical care as we now do under Medicaid, our medical care arrangements will not change. We will continue to get covered Medicaid services from any doctor or hospital that will accept Medicaid. If we get medical services from people or locations that do not accept Medicaid or if

we use any services that are not covered by Medicaid, neither the Medicaid program nor the Study will pay for those services.

- c) If the Study assigns me and my family to Health Care Plus, our covered Medicaid benefits will be provided by Health Care Plus, except long term care. We will be able to choose a personal doctor(s) from the list of doctors who practice at Health Care Plus, and that doctor(s) will manage our medical care services. If we need to go to the hospital, our personal plan doctor will arrange treatment at Lutheran Medical Center. Services from specialists or from doctors who do not practice at the plan must be okayed by our personal plan doctor(s) or by Health Care Plus. If we use services without getting this OK, neither Health Care Plus nor the Study will pay for those services. (If we are assigned to Health Care Plus, I understand that we can choose to get family planning and reproductive health services from Health Care Plus doctors or any other doctor that accepts Medicaid.)
- d) As a Study participant, I understand that my eligibility for Medicaid services (and that of participating family members) will be guaranteed for nine months after the date on which we begin to take part in Study. I also understand that if I choose to stop participating in the Study, I will give up any remaining guarantee.
- e) I understand that my family and I can choose to enroll at Health Care Plus even if I decide not to participate in the Study, and our eligibility for Medicaid could be guaranteed for six months after our enrollment date.

#### 4.1 INFORMATION THAT I WILL PROVIDE

I understand that I am being asked to take part in the Study for two years. I also understand that a Study representative will stay in touch with me and my family during this two-year period by mail or telephone. We will be asked to provide the following kinds of information:

- a) Health Questionnaire: Now, and every six months, I will be asked to fill out a questionnaire describing how I feel about my health and how satisfied I am with my medical care. I will also be asked to fill out a form for each of my participating children younger than 14 about their health and medical care. I understand that participating children 14 and older will fill out their own forms.
- b) Use of Services: Now, and every two months, I will be asked to fill out a short form for me and each participating child younger than 14 about the medical care we used during the previous two months. I understand that participating children 14 and older will fill out their own forms.
- c) I understand that my family will receive small cash payments when we complete Study questionnaires:

\$3.00 now when I complete the family interview

\$5.00 every six months we complete the Health Questionnaires  
and Use of Services forms

\$3.00 every two months when we complete the Use of Services forms

I also understand that these payments will not cause me or my family to lose our eligibility for Medicaid. When I report these payments to ADC, they will be treated as income.

#### 5.1 INFORMATION OTHERS WILL PROVIDE

I understand that New York's Medicaid program and Health Care Plus have agreed to provide the Study with other information about how my family and I have used Medicaid services in the past, and how we use them during the next two years.

#### 6.1 CHOOSING TO TAKE PART IN THE STUDY

- a) I understand that I do not have to take part in the Study. My decision to take part is entirely up to me. Whether I take part or not will not cause me or my family to lose Medicaid eligibility. I also understand that my family and I may refuse to answer any question that the Study asks us, and we can stop taking part in the Study at any time.
- b) I understand that the Study may assign me and my family to Health Care Plus. I also understand that if we decide to leave the plan, we must follow the plan's special process for leaving. If we apply to leave the plan, I understand that we will continue to get medical care at Health Care Plus for three to six more weeks, until we are eligible again to get medical care through regular Medicaid. I also understand that if we leave Health Care Plus, we will lose any remaining guaranteed eligibility for Medicaid services.

#### 7.1 WHO WILL USE THIS INFORMATION

I understand that the information my family and I give the Study, and the information that others give to the Study about us, will be kept absolutely private. It will not be given to our doctors or to the Medicaid program. When The Rand Corporation talks or writes about the Study, they will combine our answers with the answers from everyone else taking part in the Study. Any information that would permit identification of me or my family will be used only for Study purposes. It will not be released or given to anyone unless I agree or unless the law requires that the information be released.

#### 8.1 HOW TO GET MORE INFORMATION

If I have any questions about the Study, I can call the Study representative collect at [fill in phone of local Study representative], or I can call Chris Collins at The Rand Corporation collect at (213)

393-0411. I will be given a card that lists the names and telephone numbers of people to call if I have questions about the Study or need help filling out the forms, or if I have questions about my Medicaid eligibility during the guarantee period.

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I have read and have had this information explained to me and I understand it. I voluntarily agree to participate in the Study under the conditions described here.

PLEASE PRINT YOUR NAME BELOW, AND THEN WRITE YOUR SIGNATURE.

Miss Ms.

Mrs. Mr.

First Name

Middle Initial

Last Name

YOUR SIGNATURE: \_\_\_\_\_

TODAY'S DATE: \_\_\_\_\_

The following members of my family will participate in the Study if they are eligible.

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8/6/86

## Versión R

## EL ESTUDIO SOBRE EL CUIDADO MEDICO DE FAMILIAS USANDO MEDICAID

## 1.1 DE QUE SE TRATA ESTE ESTUDIO

Este es un estudio de las familias las cuales actualmente reciben Medicaid. Su propósito es estudiar la salud de estas familias y averiguar la clase de cuidado médico que usan y que tan satisfechas están con ese cuidado. El estudio investiga dos maneras de proporcionar el cuidado médico a las familias:

- o La manera normal, en la cual las familias usan sus tarjetas de Medicaid para recibir el cuidado médico permitido de cualquier doctor u hospital que acepta Medicaid; y
- o Planes de la salud pagados por adelantado, en los cuales las familias consiguen todos sus beneficios permitidos por Medicaid de doctores y hospitales que pertenecen al plan.

El estudio está hecho por la Corporación Rand, la cual está ubicada en Santa Mónica, California. El estudio está financiado por la Fundación Robert Wood Johnson y la Administración del Financiamiento del Cuidado de la Salud dentro del Departamento de Salud y Servicios Humanos de los Estados Unidos. Ha sido aprobado por la Ciudad de Nueva York, Administración de los Recursos Humanos.

## 2.1 QUIEN PUEDE PARTICIPAR EN EL ESTUDIO

Sólo las familias que tienen derecho de recibir Asistencia para Hijos Dependientes (ADC) o Medicaid relacionado a ADC pueden participar en este estudio. Para participar en este estudio, todavía necesito tener derecho a Medicaid el día [fecha, usualmente el primer día del siguiente mes]. Los miembros elegibles de mi familia que están incluidos bajo mi tarjeta de Medicaid en el día [fecha, usualmente el primer día del siguiente mes] puedan participar en el estudio. Un representante del estudio me llamará antes de la fecha para decirme si podemos participar en el estudio.

## 3.1 COMO MI PARTICIPACION EN EL ESTUDIO ME PUEDA AFECTAR

Tengo entendido que si participo en el estudio, quiere decir lo siguiente:

- a) El estudio pueda pedir que mi familia y yo cambiamos nuestros arreglos para el cuidado médico. El estudio nos dará un 50 por ciento de posibilidad o de continuar con el cuidado médico como lo tenemos ahora con Medicaid, o de inscribirnos como miembros de Medicaid en un plan de salud pagado por adelantado del Lutheran Medical Center que se llama Health Care Plus.

- b) Si el estudio designa a mí y a mi familia a continuar de recibir el cuidado médico que ahora recibimos por medio de Medicaid, nuestros arreglos del cuidado médico no cambiarán. Continuaremos de recibir los servicios de Medicaid de cualquier doctor u hospital que acepta Medicaid. Si conseguimos servicios médicos de personas o lugares que no aceptan Medicaid o si usamos cualquier servicio que no está incluido en Medicaid, ni el programa de Medicaid ni el estudio pagará esos servicios.
- c) Si el estudio designa a mí y a mi familia al plan Health Care Plus, nuestros beneficios de Medicaid serán proporcionados por Health Care Plus, menos los del cuidado por largo plazo. Tendremos el derecho de escoger un doctor personal de una lista de doctores que trabajan en Health Care Plus, y ese doctor estará a cargo de nuestros servicios del cuidado médico. Si es necesario ir al hospital, nuestro doctor personal del plan hará los arreglos para el tratamiento en el Lutheran Medical Center. Los servicios de un especialista o de un doctor que no participa en el plan debe ser aprobado por el doctor personal del plan o por Health Care Plus. Si usamos tales servicios sin esta aprobación, ni Health Care Plus ni el estudio pagará los servicios. (Si nos designa al plan de Health Care Plus, tengo entendido que podemos escoger de recibir los servicios de planificación familiar y de la salud reproductiva de los doctores de Health Care Plus o de cualquier otro doctor que acepta Medicaid.)
- d) Como participante en el estudio, tengo entendido que mi elegibilidad a los servicios de Medicaid (y la de los miembros de mi familia que participan) será garantizada por nueve meses después de la fecha en que empezamos a participar en el estudio. También entiendo que si escojo de dejar de participar en el estudio, dejaré cualquier garantía que queda.
- e) Tengo entendido que yo y mi familia podemos escoger inscribirnos en Health Care Plus aunque no hayamos decidido participar en el estudio, y que nuestra elegibilidad a Medicaid pudiera ser garantizada durante los seis meses después de la fecha de inscripción.

#### 4.1 INFORMACION QUE PROPORCIONARE

Tengo entendido que me piden participar en el estudio durante dos años. También tengo entendido que el representante del estudio se mantendrá en contacto conmigo y con mi familia durante este período de dos años por medio del correo o por teléfono. Nos pedirán proporcionar las siguientes clases de información:

- a) Cuestionario sobre la Salud: Ahora, y dos veces al año, me pedirán llenar un cuestionario describiendo cómo me siento de mi salud y que tan satisfecho estoy con mi cuidado médico. También me pedirán llenar una forma para cada uno de mis hijos participantes de menos de 14 años de edad. Tengo entendido que los

hijos participantes que tienen 14 años o más de edad llenarán sus propias formas.

- b) Uso de Servicios: Ahora, y cada tercer mes, me pedirán llenar un cuestionario corto por mi parte y por parte de cada hijo participante de menos de 14 años de edad acerca del cuidado médico que hemos usado durante los dos meses anteriores. Tengo entendido que los hijos participantes que tienen 14 años o más de edad llenarán sus propias formas.
- c) Tengo entendido que mi familia recibirá unos pagos pequeños cuando llenemos los cuestionarios del estudio:

\$3.00 hoy cuando termino la entrevista inicial

\$5.00 dos veces al año al llenar el Cuestionario sobre la Salud y la forma del Uso de Servicios

\$3.00 cada tercer mes al llenar sólo la forma del Uso de Servicios

También tengo entendido que estos pagos no afectarán mis derechos ni los de mi familia a los beneficios de Medicaid. Cuando les cuento a ADC de estos pagos en efectivo, los tomarán como ingresos.

#### 5.1 INFORMACION PROPORCIONADA POR OTRAS PERSONAS

Tengo entendido que el programa de Medicaid de Nueva York y Health Care Plus están de acuerdo en proporcionar información al estudio de cómo yo y mi familia hemos usados los servicios de Medicaid, y cómo los usamos durante los próximos dos años.

#### 6.1 LA DECISION DE PARTICIPAR EN EL ESTUDIO

- a) Tengo entendido que no tengo que participar en el estudio. La decisión de participar o no es completamente a mi criterio. Si decido participar o no en el estudio, no cambiarán mis derechos ni los de mi familia a los beneficios de Medicaid. También tengo entendido que yo y mi familia podemos rehusar contestar cualquier pregunta en el estudio, y podemos dejar de participar en el estudio en cualquier momento.
- b) Tengo entendido que el estudio nos podría designar a mí y a mi familia a Health Care Plus. También entiendo que si decidimos dejar el plan, tendremos que seguir el proceso especial del plan para salir. Si aplicamos para dejar el plan, tengo entendido que continuaremos a recibir el cuidado médico de Health Care Plus para tres o hasta seis semanas más hasta que tenemos derecho otra vez al cuidado médico a través del Medicaid normal. También entiendo que si dejamos Health Care Plus, perderemos cualquier derecho garantizado que queda a los servicios de Medicaid.

## 7.1 QUIEN USARA ESTA INFORMACION

Tengo entendido que la información proporcionada por mí y por mi familia a este estudio, y la información acerca de nosotros proporcionada por otros, será estrictamente confidencial. No la proporcionaré a nuestros doctores ni al programa de Medicaid. Cuando la Corporación Rand habla o escribe acerca del estudio, combinará nuestras respuestas con las de todas las personas participando en el estudio. Cualquier información que permitiera la identificación mía o de mi familia será usada sólo para los propósitos del estudio. No será divulgada a ninguna persona sin mi permiso anterior, al menos que se lo requiera por la ley.

## 7.1 COMO CONSIGO MAS INFORMACION

Si tengo alguna pregunta acerca del estudio, puedo llamar por cobrar al representante del estudio al número [número telefónico del representante local del estudio], o puedo llamar por cobrar a Chris Collins de la Corporación Rand al número (213) 393-0411. Recibiré una tarjeta con los nombres y números telefónicos donde puedo llamar si tengo alguna pregunta acerca del estudio o si necesito ayuda en llenar los cuestionarios, o si tengo alguna pregunta acerca de mis derechos a Medicaid durante el período de garantía.

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He leído y me ha explicado esta información, y lo entiendo. Por mi propia voluntad estoy de acuerdo en participar en el estudio bajo las condiciones descritas aquí.

FAVOR DE ESCRIBIR SU NOMBRE EN LETRAS DE MOLDE ABAJO, Y LUEGO SU FIRMA.

Srta. (Ms.)

Sra. Sr.

Primer Nombre

Segundo Nombre

Apellido Paternal

SU FIRMA

LA FECHA DE HOY

Los siguientes miembros de mi familia participarán en el estudio si son elegibles.

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8/6/86

## Version F

## MEDICAL CARE STUDY OF FAMILIES USING MEDICAID

## 1.1 WHAT THIS STUDY IS ABOUT

This is a study of families who currently receive Medicaid. Its purpose is to study the health of these families and to find out what kind of medical care they use and how satisfied they are with their care. The Study is being done by The Rand Corporation, which is located in Santa Monica, California. It is being paid for by the Robert Wood Johnson Foundation and the Health Care Financing Administration, in the U.S. Department of Health and Human Services. It has the approval of the New York City, Human Resources Administration (HRA).

## 2.1 CHOOSING TO TAKE PART IN THE STUDY

I understand that I do not have to take part in the Study. My decision to take part is entirely up to me. If I decide not to take part in the Study, that will not change Medicaid eligibility for me or my family. I also understand that my family and I may refuse to answer any question that the Study asks us.

## 3.1 INFORMATION THAT I WILL PROVIDE

- a.) I am answering questions in an interview about my family now. I will also be asked to complete a questionnaire describing my own health and how satisfied I am with my medical care, and a questionnaire about my recent use of medical care. In addition, I will be asked to complete and send back forms for each of my participating children younger than 14 about their health and medical care. I understand that participating children 14 and older will fill out their own forms.
- b.) I understand that I will receive \$3.00 today when I complete the family interview, and that I will receive an additional \$5.00 when the other forms my family and I fill out are mailed back and received at The Rand Corporation. I understand that these payments will not cause me or my family to lose our Medicaid eligibility. When I report these cash payments to ADC, they will be treated as income.

## 4.1 INFORMATION OTHERS WILL PROVIDE

I understand that New York's Medicaid program has agreed to provide the Study with information about how my family and I use Medicaid services.

## 5.1 WHO WILL USE THIS INFORMATION

I understand that the information my family and I give the Study, and the information that others give to the Study about us, will be kept

absolutely private. It will not be given to our doctors or to the Medicaid program. When The Rand Corporation talks or writes about the Study, they will combine our answers with the answers from everyone else taking part in the Study. Any information that would permit identification of me or my family will be used only for Study purposes. It will not be released or given to anyone unless I agree or unless the law requires that the information be released.

#### 6.1 HOW TO GET MORE INFORMATION

If I have any questions about the Study, I can call the Study representative collect at [fill in phone of local Study representative], or I can call Chris Collins at The Rand Corporation collect at (213) 393-0411. I will be given a card that lists the names and telephone numbers of people to call if I have questions about the Study or need help filling out the forms.

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I have read and have had this information explained to me and I understand it. I voluntarily agree to participate in the Study under the conditions described here.

PLEASE PRINT YOUR NAME BELOW, AND THEN WRITE YOUR SIGNATURE.

Miss Ms.

Mrs. Mr.

First Name

Middle Initial

Last Name

YOUR SIGNATURE:

TODAY'S DATE:

The following members of my family will participate in the Study if they are eligible.

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8/6/86

## Versión F

## EL ESTUDIO SOBRE EL CUIDADO MEDICO DE FAMILIAS USANDO MEDICAID

## 1.1 DE QUE SE TRATA ESTE ESTUDIO

Este es un estudio de las familias las cuales actualmente reciben Medicaid. Su propósito es estudiar la salud de estas familias y averiguar la clase de cuidado médico que usan y que tan satisfechas están con ese cuidado. El estudio está hecho por la Corporación Rand, la cual está ubicada en Santa Mónica, California. El estudio está financiado por la Fundación Robert Wood Johnson y la Administración del Financiamiento del Cuidado de la Salud dentro del Departamento de Salud y Servicios Humanos de los Estados Unidos. Ha sido aprobado por la Ciudad de Nueva York, Administración de los Recursos Humanos.

## 2.1 LA DECISION DE PARTICIPAR EN EL ESTUDIO

Tengo entendido que no tengo que participar en el estudio. La decisión de participar o no es completamente a mi criterio. Si decido no participar en el estudio, no cambiarán mis derechos ni los de mi familia a los beneficios de Medicaid. También tengo entendido que yo y mi familia podamos rehusar contestar cualquier pregunta en el estudio.

## 3.1 INFORMACION QUE PROPORCIONARE

- a) Ahora estoy contestando unas preguntas en una entrevista acerca de mi familia. También me pedirá llenar un cuestionario describiendo mi propia salud y que tan satisfecho estoy con mi cuidado médico, y un cuestionario acerca de mi uso reciente del cuidado médico. Además me pedirá llenar y devolver unas formas acerca de su salud y el cuidado médico para cada uno de mis hijos participantes de menos de 14 años de edad. Tengo entendido que los hijos participantes que tienen 14 años o más de edad llenarán sus propias formas.
- b) Tengo entendido que hoy recibiré \$3.00 cuando termino la entrevista acerca de mi familia. Y cuando la Corporación Rand reciba las otras formas mías y de mi familia, las cuales regreso por correo, recibiré unos \$5.00 adicionales. Tengo entendido que estos pagos no afectarán mis derechos a los beneficios de Medicaid. Cuando les cuento a ADC de estos pagos en efectivo, los tomarán como ingresos.

## 4.1 INFORMACION PROPORCIONADA POR OTRAS PERSONAS

Tengo entendido que el programa de Medicaid de Nueva York está de acuerdo en proporcionar información al estudio de cómo yo y mi familia usamos los servicios de Medicaid.

## 5.1 QUIEN USARA ESTA INFORMACION

Tengo entendido que la información proporcionada por mí y por mi familia a este estudio, y la información acerca de nosotros proporcionada por otros, será estrictamente confidencial. No la proporcionaré a nuestros doctores ni al programa de Medicaid. Cuando la Corporación Rand habla o escribe acerca del estudio, combinará nuestras respuestas con las de todas las personas participando en el estudio. Cualquier información que permitiera la identificación mía o de mi familia será usada sólo para los propósitos del estudio. No será divulgada a ninguna persona sin mi permiso anterior, al menos que se lo requiera por la ley.

## 6.1 COMO CONSIGO MAS INFORMACION

Si tengo alguna pregunta acerca del estudio, puedo llamar por cobrar al representante del estudio al número [número telefónico del representante local del estudio], o puedo llamar por cobrar a Chris Collins de la Corporación Rand al número (213) 393-0411. Recibiré una tarjeta con los nombres y números telefónicos donde puedo llamar si tengo alguna pregunta acerca del estudio o si necesito ayuda en llenar los cuestionarios.

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He leído y me ha explicado esta información, y lo entiendo. Por mi propia voluntad estoy de acuerdo en participar en el estudio bajo las condiciones descritas aquí.

FAVOR DE ESCRIBIR SU NOMBRE EN LETRAS DE MOLDE ABAJO, Y LUEGO SU FIRMA.

Srta. (Ms.)

Sra. Sr.

Primer Nombre

Segundo Nombre

Apellido Paternal

SU FIRMA

LA FECHA DE HOY

Los siguientes miembros de mi familia participarán en el estudio si son elegibles.

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8/6/86

## **Appendix D**

### **FIELD OPERATIONS**

To enroll families in the study and follow them for a year, we set up field offices in each site and hired enrollers from within the area. Each field office had a field manager, an office clerk, and a complement of interviewers/enrollers, 10 in New York and 12 in Florida. These field offices were supervised by a field director and an assistant, both based at RAND. We began our field operations in New York and followed several months later in Florida.

Bilingual interviewers and those with previous experience were given preference in hiring. Interviewers were given a one-week training course and several extra interviewers were trained allowing for attrition after training. An introduction to the plans and coordination with plan enrollers was an integral part of the training. A debriefing session was scheduled after the first two weeks of enrollment operations. Periodic debriefings were scheduled throughout the enrollment process.

Evaluation interviewers were given the names and addresses of Medicaid-eligibles who had been randomly sampled at RAND from the state Medicaid eligibility list for the current month. The field manager at each site was responsible for the assignment of sampled cases. Interviewers then went out to the home addresses of their assigned cases for the enrollment interview. Results of the attempted interview were recorded on the contact form for each case. Interviewers were instructed to return cases to the field manager after three unsuccessful attempts to contact and interview a family.

The logistics of PPMHC enrollment for families assigned to the random-assignment PPMHC group were the biggest challenge. Once the evaluation interviewers completed their interviews, families assigned to the PPMHC were told that they had to visit the plan to complete the actual plan enrollment. Follow-through on this portion of the study was the least satisfactory. Our enrollers provided the plan with the names, addresses, and telephone numbers of families that had been assigned to the plan and had agreed to enroll.

When these families visited the plan and completed the plan's enrollment process in New York, plan enrollers completed a special form that was sent to New York City Human Resources Administration (HRA). These enrollments were then recorded in the state's eligibility

files with special codes. Separate codes distinguished regular PPMHC enrollments into the plan from those who entered the PPMHC through the evaluation. The codes were necessary to track the guaranteed Medicaid eligibility associated with plan enrollment and with evaluation participation. Since the study also guaranteed Medicaid eligibility for random-assignment FFS enrollees, the city also gave these study participants special codes. The New York PPMHC's regular staff plan enrollers worked on a bonus system and did not receive credit for enrollments that were generated by the evaluation team's enrollers. The plan made no effort to contact random-assignment families that had agreed to enroll in the plan but did not initiate a visit to the plan to complete their enrollment.

In Florida, the plan's enrollers worked more closely with the evaluation enrollers by following up on all cases to schedule the plan visit. Because there was no guaranteed eligibility in Florida, plan enrollments attributable to the evaluation were not distinguished in state Medicaid records from those attributable to the plan itself. The relationship between evaluation interviewers and plan enrollers worked much more smoothly in Florida than in New York.

## BIBLIOGRAPHY

- Anderson, Maren D., and Peter D. Fox, "Lessons Learned from Medicaid Managed Care Approaches," *Health Affairs*, Spring 1987, pp. 71-86.
- Aved, Barbara M., "The Monterey County Health Initiative: A Post-Mortem Analysis of a California Medicaid Demonstration Project," *Medical Care*, Vol. 25, No. 1, January 1987, pp. 35-45.
- Bahlke, Barbara, and Howard S. Zuckerman, "Organizational Factors and Performance of Individual Practice Associations," *Journal of Ambulatory Care Management*, May 1982, pp. 14-23.
- Barr, Judith K., Raymond Fink, John Colombotos, and Mark Schacter, "Physician Decision Making: Effects of HMO Model Type and Characteristics of Medical Practice on Utilization," *GHAA Journal*, Winter 1987/88, pp. 43-52.
- Bice, T. W., "Risk Vulnerability and Enrollment in a Prepaid Group Practice," *Medical Care*, Vol. 12, August 1975, pp. 698-703.
- Bonham, Gordon Scott, and Gerald M. Barber, "Use of Health Care Before and During Citicare," *Medical Care*, Vol. 25, No. 2, February 1987, pp. 111-119.
- Carter, Grace M., and Paul B. Ginsburg, *The Medicare Case Mix Index Increase: Medical Practice Changes, Aging, and DRG Creep*, RAND, R-3292-HCFA, June 1985.
- Christianson, Jon B., Susan M. Sanchez, Douglas R. Wholey, and Maureen Shadle, "The HMO Industry: Evolution in Population Demographics and Market Structures," *Medical Care Review*, Vol. 48, No. 1, 1991, pp. 3-16.
- Congressional Research Service, *Medicaid Source Book: Background Data and Analysis*, U.S. Government Printing Office, Washington, D.C., 1988.
- Davidson, S., G. Fleming, M. Hohlen, L. Manheim, B. Shapiro, and S. Werner, *Physician Reimbursement and Continuing Care Under Medicaid: A Demonstration (The Children's Medicaid Program)*, The American Academy of Pediatrics, HCFA Contract No. C-000-94 (May 1988), final report under HCFA Grant 11-P-98052/2-01, American Academy of Pediatrics, Elk Grove Village, IL, May 1988.

- Davies, Allyson Ross, Harris M. Allen, Willard G. Manning, Susan Holtby, Howard L. Bailit, and John E. Ware, Jr., *Explaining Dental Utilization Behavior*, RAND, R-3518-NCHSR, August 1972.
- Davies, Allyson Ross, John E. Ware, Robert H. Brook, Jane R. Peterson, and Joseph P. Newhouse, "Consumer Acceptance of Prepaid and Fee-for-Service Medical Care: Results from a Randomized Controlled Trial," *Health Services Research*, Vol. 21, No. 3, August 1986, pp. 429-452.
- DesHarnais, S. I., "Enrollment in and Disenrollment from Health Maintenance Organizations by Medicaid Recipients," *Health Care Financing Review*, Vol. 6, No. 3, Spring 1985, pp. 39-50.
- D'Onofrio, Carol N., and Patricia Dolan Mullen, "Consumer Problems with Prepaid Health Plans in California," *Public Health Reports*, Vol. 92, No. 2, March-April 1977, pp. 121-134.
- Duan, N., W. G. Manning, Jr., C. N. Morris, and J. P. Newhouse, "A Comparison of Alternative Models of the Demand for Medical Care," *Journal of Economic and Business Statistics*, Vol. 1, April 1983, pp. 115-126.
- Eggers, Paul W., and Ronald Prihoda, "Pre-Enrollment Reimbursement of Medicine Beneficiaries Enrolled in (At-Risk) HMOs," *Health Care Financing Review*, Vol. 4, No. 1, September 1982, pp. 55-73.
- Enthoven, A. C., *Health Plan: The Only Practical Solution to the Soaring Cost of Medical Care*, Addison-Wesley, Reading, Massachusetts, 1980.
- Epstein, Arnold M., and Edward Cummella, "Capitation Payment: Using Predictors of Medical Utilization to Adjust Roles," *Health Care Financing Review*, Vol. 10, No. 1, 1988, pp. 51-69.
- Etheredge, Lynn, "The World of Insurance: What Will the Future Bring?" *Business and Health*, Vol. 3, No. 3, January/February 1986, pp. 5-9.
- Fox, Peter D., and Maren D. Anderson, "Hybrid HMOs, PPOs: The New Focus," *Business and Health*, Vol. 3, No. 4, March 1986, pp. 20-27.
- Freeman, Howard E., K. Jill Kiecolt, and Harris M. Allen, II, "Community Health Centers: An Initiative of Enduring Utility," *Health and Society*, Vol. 60, No. 2, 1982, pp. 245-267.

- Freund, Deborah A., et al., "Evaluating the Medicaid Competition Demonstration," *Health Care Financing Review*, Vol. 11, No. 2, Winter 1989, pp. 81-97.
- Freund, Deborah A., and Robert E. Hurley, "Managed Care in Medicaid: Selected Issues in Program Origins, Design and Research," *Annual Review of Public Health*, Vol. 8, 1987, p. 137.
- Freund, Deborah A., and Edward Neuschler, "Overview of Medicaid Capitation and Case-Management Initiatives," *Health Care Financing Review*, 1986 Annual Supplement, pp. 21-30.
- Freund, Deborah A., Polly M. Ehrenhaft, and Marie Hackbarth, *Medicaid Reform: Four Studies of Case Management*, American Enterprise Institute for Public Policy Research, Washington and London, 1984.
- Freund, D. A., L. F. Rossiter, P. D. Fox, J. A. Meyer, R. E. Hurley, T. S. Carey, and J. E. Paul, "Evaluation of the Medicaid Competition Demonstration," *Health Care Financing Review*, Vol. 11, No. 2, Winter 1989, pp. 81-97.
- Grannemann, Thomas W., and Mark V. Pauly, *Controlling Medicaid Costs: Federalism, Competition and Choice*, American Enterprise Institute, Washington, D.C., 1983.
- Hester, James, and Elliot Sussman, "Medicaid Prepayment: Concept and Implementation," *Health and Society*, Fall 1974, pp. 415-444.
- Hillman, Alan L., W. Pete Welch, and Mark V. Pauly, "Contractual Arrangements Between HMOs and Primary Care Physicians: Three-Tiered HMOs and Risk Pools," *Medical Care*, Vol. 30, No. 2, February 1992, pp. 137-147.
- Huber, P. J., "The Behavior of Maximum Likelihood Estimates Under Nonstandard Conditions," *Fifth Berkeley Symposium on Mathematical Statistics and Probability*, Vol. 1, 1967, pp. 221-233.
- Hurley, Robert, "Status of the Medicaid Competition Demonstrations," *Health Care Financing Review*, Vol. 8, 1986, p. 65.
- Hurley, Robert E., and Deborah A. Freund, "A Typology of Medicaid Managed Care," *Medical Care*, Vol. 26, No. 8, August 1988, pp. 764-774.
- Hurley, Robert E., Deborah A. Freund, and Captain Donald E. Taylor, "Emergency Room Use and Primary Case Management: Evidence from Four Medicaid Demonstration Programs," *American Journal of Public Health*, Vol. 79, 1989a, pp. 63-71.

- Hurley, Robert E., Deborah A. Freund, and Captain Donald E. Taylor, "Gatekeeping the Emergency Department: Impact of a Medicaid Primary Care Case Management Program," *Health Care Management Review*, Vol. 14, No. 2, 1989b, pp. 63-71.
- InterStudy, *National HMO Census 1985*, Interstudy, Excelsior, Minnesota, 1985.
- Langwell, K. M., "Structure and Performance of Health Maintenance Organizations: A Review," *Health Care Financing Review*, Vol. 12, No. 1, Fall 1990, pp. 71-79.
- Leibowitz, Arleen, and Joan L. Buchanan, "Setting Capitations for Medicaid: A Case Study," *Health Care Financing Review*, Vol. 11, No. 4, Summer 1990, pp. 79-85.
- Long, Stephen, H., and Russell F. Settle, "An Evaluation of Utah's Primary Care Case Management Program for Medicaid Recipients," *Medical Care*, Vol. 26, No. 11, November 1988, pp. 1021-1032.
- Luft, H. S., *Health Maintenance Organizations: Dimensions of Performance*, John Wiley and Sons, Inc., New York, 1981.
- Manning, Willard G., et al., *A Controlled Trial of the Effect of a Prepaid Group Practice on the Utilization of Medical Services*, RAND, R-3029-HHS, September 1985.
- Manning, W. G., Arleen Leibowitz, George Goldberg, William Rogers, and Joseph P. Newhouse, "A Controlled Trial of the Effect of a Prepaid Group Practice on Use of Services," *New England Journal of Medicine*, Vol. 310, June 7, 1984, pp. 1505-1510.
- McCall, N., et al., "Evaluation of Arizona Health Care Cost Containment System," *Health Care Financing Review*, Vol. 9, No. 2, Winter 1987, pp. 79-89.
- Moore, Sylvia F., "The Minneapolis Experience—Is This the Future for Managed Care?" *Healthcare Trends Report*, Vol. 5, No. 8, August/September 1991.
- Morrison, E. M., and H. S. Luft, "Health Maintenance Organization Environments in the 1980s and Beyond," *Health Care Financing Review*, Vol. 12, No. 1, Fall 1990, pp. 81-90.
- Perkoff, G. T., L. Kahn, and P. J. Haas, "The Effects of an Experimental Prepaid Group Practice on Medical Care Utilization and Cost," *Medical Care*, Vol. 14, 1976, pp. 432-449.

- Prottas, J., and E. Handler, "The Complexities of Managed Care: Operating a Voluntary System," *Journal of Health Politics, Policy and Law*, Vol. 12, No. 2, 1987, pp. 253-269.
- Richardson, W. C., "Measuring the Urban Poor's Use of Physicians' Services in Response to Illness Episodes," *Medical Care*, Vol. 8, 1970, pp. 132-142.
- Rosenbaum, Paul, and Donald Rubin, "The Central Role of the Propensity Score for Controlling Bias in Observational Studies," *Biometrika*, Vol. 70, No. 1, 1983, pp. 41-55.
- Rosenbaum, Sara, Dana Hughes, Elizabeth Butler, and Deborah Howard, "Incantations in the Dark: Medicaid, Managed Care, and Maternity Care," *The Milbank Quarterly*, Vol. 66, No. 4, 1988, pp. 661-693.
- Rowland, Diane, and Barbara Lyons, "Mandatory HMO Care for Milwaukee's Poor," *Health Affairs*, Spring 1987, pp. 87-100.
- Spitz, Bruce, "A National Survey of Medicaid Case-Management Programs," *Health Affairs*, Spring 1987, pp. 61-70.
- Spitz, Bruce, and John Abramson, "Competition, Capitation, and Case Management: Barriers to Strategic Reform," *The Milbank Quarterly*, Vol. 65, No. 3, 1987, pp. 348-370.
- Trieger, Sidney, Trudi W. Galblum, and Gerald Riley, *HMOs: Issues and Alternatives for Medicare and Medicaid*, Department of Health and Human Services, Health Care Financing Administration, Office of Research and Statistics, Washington, D.C., April 1981.
- Vertrees, James C., Kenneth G. Manton, and Keith C. Mitchell, "Case-Mix Adjusted Analyses of Service Utilization for a Medicaid Health Insuring Organization in Philadelphia," *Medical Care*, Vol. 27, No. 4, April 1989, pp. 397-411.
- Ware, John E., Jr., Robert H. Brook, William H. Rogers, Emmett B. Keeler, Allyson Ross Davies, Cathy Donald Sherbourne, George A. Goldberg, Patricia Camp, and Joseph P. Newhouse, "Comparison of Health Outcomes at Health Maintenance Organizations with Those of Fee-for-Service Care," *The Lancet*, May 3, 1986, pp. 1017-1022.
- Welch, W. P., "The New Structure of Individual Practice Associations," *Journal of Health Politics, Policy and Law*, Vol. 12, No. 4, Winter 1987, pp. 723-739.

Welch, W. Pete, and Mark E. Miller, "Mandatory HMO Enrollment in Medicaid: The Issue of Freedom of Choice," *The Milbank Quarterly*, Vol. 66, No. 1, 1988, pp. 618-639.

Wintringham, Karen, and Thomas W. Bice, "Effects of Turnover on Use of Services by Medicaid Beneficiaries in a Health Maintenance Organization," *The Group Health Journal*, Vol. 6, No. 1, Spring 1985, pp. 12-18.



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